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ISSUE • 35c



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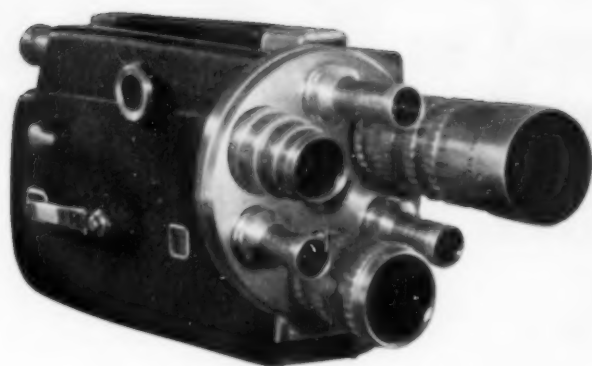
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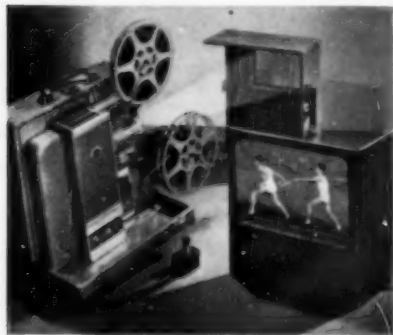
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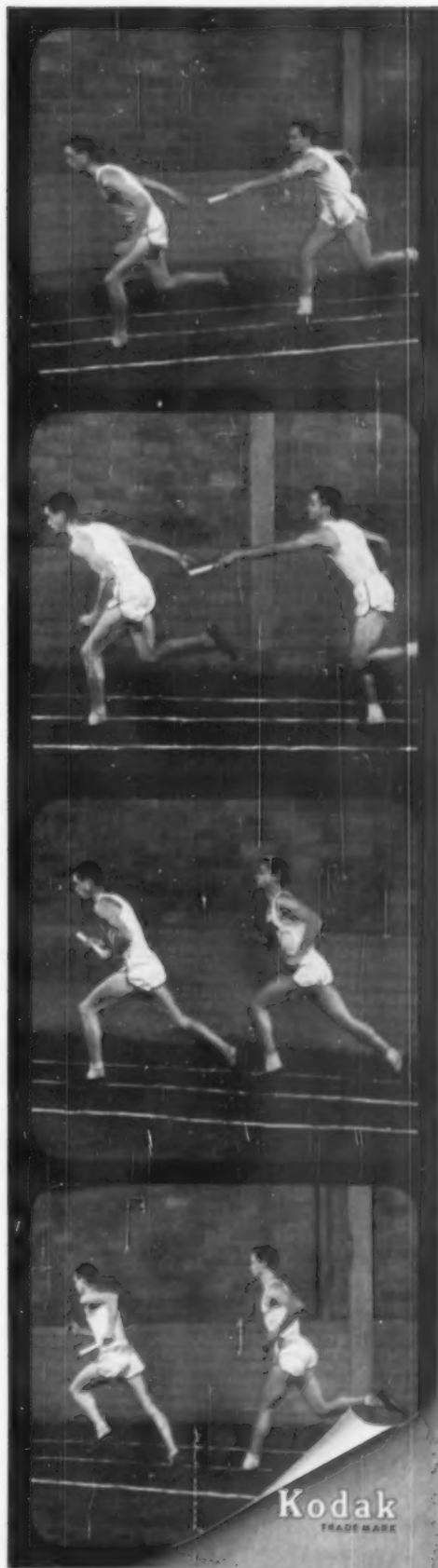
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VOLUME 30 • NUMBER 5 • JANUARY 1961

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on Quality

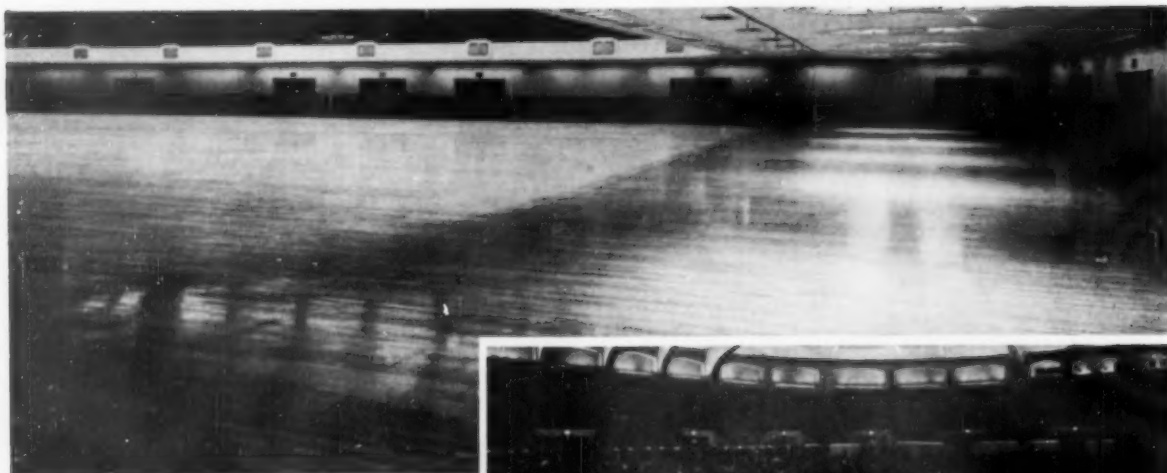


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Here
Below

Winning, fouling, Rose Bowling

THAT gutsy old bromide, "the will to win," has always given us a queasy feeling. How many banquet speakers have you heard declaim: "We must develop the will to win. It prepares our boys for the cold facts of life—in peace and in war."

We never could swallow that one without shuddering. Isn't it enough for a kid to play a game for the sheer fun of it, and let the by-products fall where they may? What athlete doesn't want to win? Would he go out for the team if he didn't?

From the time a kid starts shooting marbles until he goes into business, he's always trying to win. The degree of this drive may vary, from mild to almost insane. But there are no athletes who want to lose. Yet that "will to win" cliché is echoed in auditoriums and banquet halls 12 months a year.

That's why we stopped short—with that sudden sense of revelation you get whenever some elusive thought is crystallized for you—upon coming across a certain passage in John Updike's fine new book, *Rabbit, Run*. One of the characters, an old coach, no less, puts it this way:

"Give the boys the will to achieve. I've always liked that better than the will to win, for there can be achievement even in defeat."

Isn't that exactly right?

YOU can manipulate your TV dials from today to next week, and you won't find any better football experts than Johnny Lujack and Paul Christman. But isn't it about time they stopped playing mastermind on every second down and short yardage situation?

Invariably Paul and Johnny will pontifically interpolate: "This is a fine passing down, folks. With one (or two) yards to go, the defense will be expecting a line plunge, and a pass can cross them up. Even if the pass doesn't work, the offense

can always go for the yard on the next down."

Come on, boys, that thinking has whiskers on it. Ten, fifteen years ago, it might have been called *strategy*. Nowadays the pass is practically an automatic call. In fact the way most quarterbacks go to the pass in this situation, the *plunge* is now assuming the proportions of a surprise play.

THE other day we were called upon to settle a rather intriguing argument. Benny Ray, and Ron O'Connor, basketball coaches at Franklin Center H. S. (Ill.), wanted to know which team wins the more games—the team that commits the greater or the fewer fouls?

Our feeling always has been that the lesser-fouling team will usually wind up the winner. That home-court edge is predicated largely on this fact: That the home team will usually have less fouls called against it than the visitors.

Anyway, we made a wild dash for our basketball guides. The pro statistics, while not really conclusive, inclined toward our belief. The three best teams last year—Boston, Philadelphia, and St. Louis—finished Nos. 3, 1, and 6, respectively, in fewest personal fouls. The poorest team, Cincinnati, committed the most fouls. But Minneapolis (now Los Angeles), the next to the last team, committed the second fewest number of fouls.

The college statistics, however, shed a hard, clear light on the subject. We checked the 10 teams that committed the most personals against the 10 that committed the least. The former (most personals) showed a win-lost record of 132-107, while the latter (least personals) showed a record of 179-79.

While these are only last year's statistics, we believe that the index would hold up over the years. In short, the team committing the fewer fouls will win more games than

the team committing more fouls. (Upon checking the first 14 box scores we've seen this season, we discovered that the lesser fouling team won 11 of these games.)

OVER the years, the Faculty Senate of the University of Minnesota (consisting of all its professors) has stood Nagurski-like against any renewal of the Big Ten-Rose Bowl pact. Last spring the formal pact finally was abrogated, giving each Big Ten school the right to accept or decline any Rose Bowl tender.

As luck would have it, the Minnesota Faculty Senate had to stand up and be counted the very first year that the Rose Bowl was left up to the individual schools. And how did these profs respond? Like scared leporidae.

Get these cha-cha: The profs, while against the Rose Bowl in principle, voted to accept the bid "because it would not be fair to Big Ten teams in the future if they declined, since it might jeopardize their chances of getting an invitation."

With the same weird logic, they further "explained" that they could now view the situation in a new light inasmuch as the formal agreement between the Big Ten and the Rose Bowl game had not been renewed.

How come? Because it now was not a commitment for the conference as a whole, but a matter for each school to decide for itself.

Honest, friends, we're not making this up. That's exactly what the profs said.

Maybe we shouldn't be so hard on the high domes. It's easy to vote according to your conscience whenever the question is purely academic. But it's something else when it suddenly comes boiling to life and a mob of pseudo-civic leaders and football fanatics is waiting to hang you in effigy—or worse—if you say no to them. That takes guts.

(Continued on page 80)

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What the "Shooting"

Is All About

By JIM MAAS

EVERY school with any sort of budget "shoots" its football games. It can hardly afford not to. With competition so razor keen, you must use every "weapon" at your command. And what better teaching tool is there than the motion picture?

Movies expose every play in detail. They're invaluable in preparing your offense and defense from week to week, and you can't beat their carry-over scouting value from year to year and their marvelous aid in promoting the football program to community, booster, and student groups.

Let's see how you can derive the most from your film program. The writer posed nine highly pertinent questions to one of the top authorities in the field—J. B. Herson, one of the top sports photographers in upstate New York.

What equipment would you recommend for filming high school and college football games?

The Cine-Kodak K-100 Turret Camera seems to be the most efficient for the job. Its advantages over the other movie cameras are considerable. At last, here's a camera with a good viewfinder! It used to be quite difficult to stay with the ball on passes, punts, and kick-offs.

With the K-100, though, an amber viewing perimeter around the actual filming area in the viewfinder gives you an enlarged field of vision and makes it much easier to follow the ball in flight. This enables you to move readily with the action.

The K-100 also allows for 40 ft. of filming on one spring wind. This feature is especially appreciated by the coaching staff because it enables the photographer to handle as long a run as a 100-yard kick-off return without having to rewind.

The K-100 is easy to load—takes seconds for an experienced operator. This is important when you're filming with only one camera. You can change spools while the players are in the huddle.

What size lenses should one use to film football?

This depends somewhat on the stadium, and how far away you are from the playing field. For medium-size college stadiums (15,000), the best combination of lenses would be: 25-mm; 50-mm; 62-mm.

A 50-mm. lens is best for high school football. But many use a 25-mm lens, where towers are close to the sidelines and the cameraman wants to be able to film action immediately in front of the camera platform.

How much film is required for an average game, and what type of film is preferable?

In high schools, with short quarters, nine rolls per game is plenty. The cost is about \$70, with processing included. An Ithaca, N. Y., high school uses

7,200 feet per year for their eight-game schedule.

Some photographers attempt to conserve film by starting just prior to the snap of the ball. As a result, they miss important defensive line-up juggling and linebackers picking up flankers and men-in-motion. It's better to begin filming when the offense gets set. Then all the defensive maneuvers are recorded.

One way for the photographer to conserve film is through careful study of the opposing team early in the game. Once he can recognize the way they go into their offensive plays, he can conserve his film on long counts. He can start shooting after the teams have lined up and just at the point where there's significant action on the part of either team, e.g., changes in the defensive line-up, men in motion, linebackers picking up flankers, etc.

Typical film consumption in this area (8 games): Ithaca College, 9,600 ft. per yr.; Cortland State, 9,800 ft. per yr.; Cortland H. S., 5,000 ft. per yr.; Brighton H. S., 7,000 ft. per yr.

Under the free substitution rule, 1,600 feet per game is required in colleges. With the limited substitution ruling, this requirement drops about 400 ft. per game. I've found that under the two-platoon system, teams tend to average twice as many plays per game as they would with limited substitution. This accounts for the difference in film consumption.

Incidentally, colleges consume a much greater amount of film than do high schools. Cornell uses more than 20,000 ft. per year to film its games and fall practice sessions.

What type of projector would you recommend for coaching purposes?

The answer here is the Kodak Analyst Movie Projector, which is equipped with a reversing switch. The reversing mechanism is a must, for every play must be studied at least a dozen times to determine the performance of individual players, the offensive strategy, the defensive strategy and alignments, etc.

The projector is equipped with a table-top projection viewer, which facilitates showings when only a few people are viewing the film and a big screen is unnecessary. Ithaca, Cortland, and Watertown are just three of the many high schools using both the

(Continued on page 74)





With both curtains open, expanse of exhibition gym is evident. Folding bleachers are stored under boys balcony gym, with three retractable baskets

and backstops lowered for play. Plate girder (center) supports electric folding partition dividing area into boys and girls stations.

Physical Ed Plant with

By C. WILLIAM BRUBAKER, Perkins & Will, Chicago, Ill.



View of girls gym, with instructor standing in front of folding partition. All baskets and backstops have been retracted, providing full use of space. Upper gym is functional area which can be used for additional seating.

SIXTY gently rolling acres of land in Hillside, a suburb of Chicago, Ill., is the setting of Proviso West High School—a comprehensive institution of learning with a small school atmosphere.

Although the site is bounded by major traffic thoroughfares, a shopping center, and an expressway, a quiet atmosphere conducive to study prevails in the six major functional units compactly grouped around a central mall. Designed by Perkins & Will (Chicago and White Plains, N. Y.) to accommodate an initial student body of 2500, it provides for a conceivable enrollment of more than 4000.

An integral function of this comprehensive high school is the physical education program conducted in one of the six building units and the outdoors. The physical education and athletic building is south of the mall, extending from the curved entrance drive to a glass-enclosed corridor linking it to the library wing and the adjoining academic unit.

Facilities in the three-level physical education building include a swimming pool, four gymnasiums



View of physical education structure from library (left). From physical ed building, students can go directly to outdoor assembly area or go to library through ramped glass-enclosed corridor.



Pool is cheerfully lit with recessed fixtures in pitched aluminum ceiling, and has two one-meter diving boards at deep end. Note, through water, the prominent black and white race lane markers crossed by blue practice lanes.

4 Gyms and a Pool

combining to form an exhibition gym with seating for 4000, a wrestling area, orthopedic gym, dance studio, nine locker and team rooms, offices, lobby, four classrooms, and a drivers' training laboratory.

During a typical school day, badminton, interscholastic basketball, basket shooting, and volleyball are played in the main gym, while gymnastics and tumbling are conducted in an upper area. Deck tennis, exercises, table tennis, restricted volleyball, shuffleboard, and bowling are the sports in a "restricted" room. Then there are specialized spaces for swimming, wrestling, hygiene, first aid, driver education, and Drivotrainer machines.

Stepping to the outdoors, there are practice fields for touch football, baseball diamonds for softball, six courts for tennis, a nine-hole golf course, and other athletic areas for track, archery, and body mechanics (testing and conditioning).

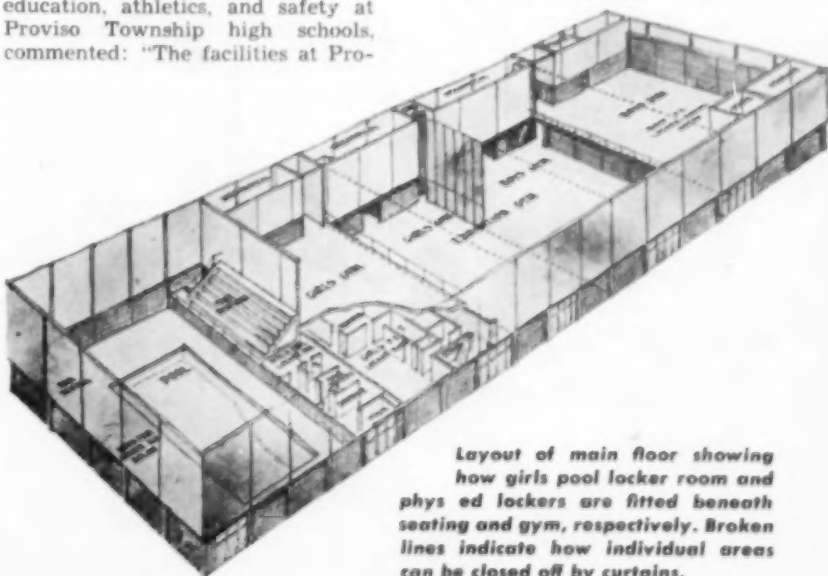
Of course, a prerequisite for enjoying active sports is physical fitness, and here, too, Proviso stands ready. Physical examinations are given in the boys' locker room and

the coaches' office, while dental, eye, and ear examinations are taken in the nurses' office.

In reviewing this extensive physical education program, E. E. Ebbert, director of health, physical education, athletics, and safety at Proviso Township high schools, commented: "The facilities at Pro-

viso West offer space for a variety of physical education activities which the building structurally is well-designed to carry out."

Access to the main floor facilities
(Continued on page 70)



Layout of main floor showing how girls pool locker room and phys ed lockers are fitted beneath seating and gym, respectively. Broken lines indicate how individual areas can be closed off by curtains.

Octagonal Thin-Shell Concrete Gym

ENTHUSIASTIC interest has been aroused by an unusual project now underway in a rapidly expanding suburb of Oklahoma City. Part of an overall program planned for the Western Heights School District, this 2,500-seat thin-shell concrete gymnasium embodies several innovations in design and construction which make it important both to educator and architect.

Scheduled for completion sometime in 1962, the soaring 3" concrete membrane covers more than 30,000 sq. ft. of floor space on five convenient levels and contains three basketball courts which can accommodate simultaneous but separated athletic activities for boys and girls or allow tournament play on its main court.

Flanked by a regulation size natatorium and ample public parking, it completely separates public

circulation and spectator facilities from student participant accommodations. It's the local district's solution to the pressing problem of providing a large and permanent facility for a populous expected to expand so rapidly as to outpace present fiscal abilities.

The district lies just southwest of one of America's most rapidly growing cities, and is the residential hub of an expanding industrial area which has created a vital demand for a fast-growing school system. The immediate needs were almost overwhelming; the future indicated no signs of slackening.

Although future budget prospects appeared pleasant due to the rising tax evaluation of incoming industry, the available funds were vastly inadequate for imminent needs. The school board refused to panic.

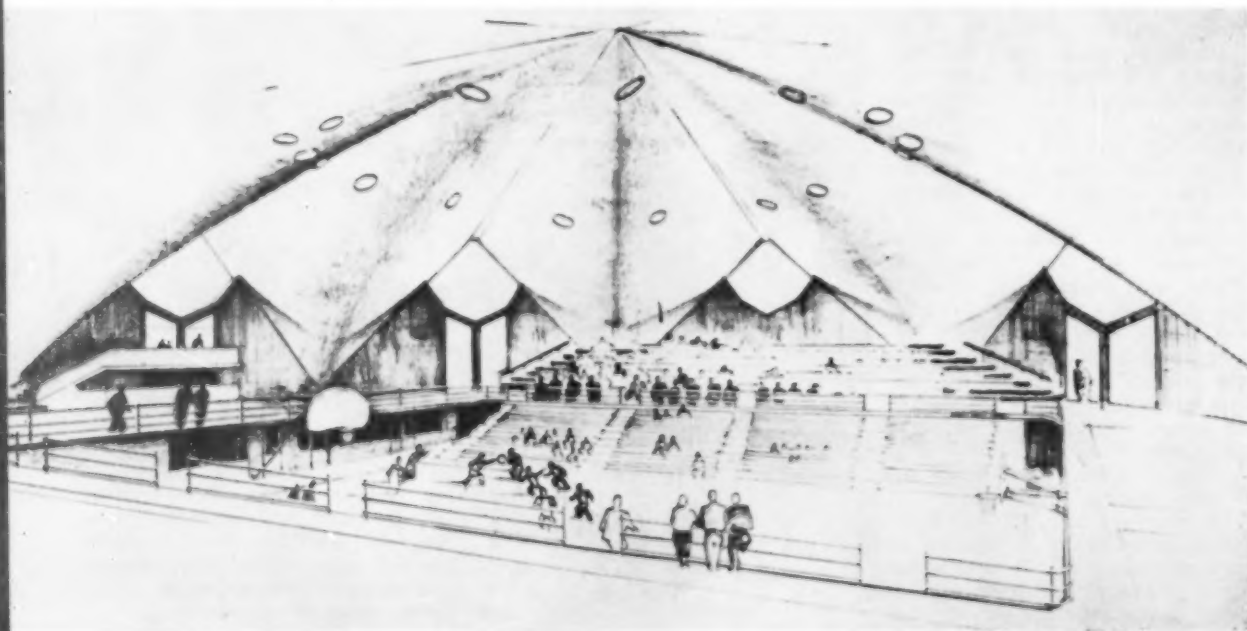
Recognizing that temporary sub-

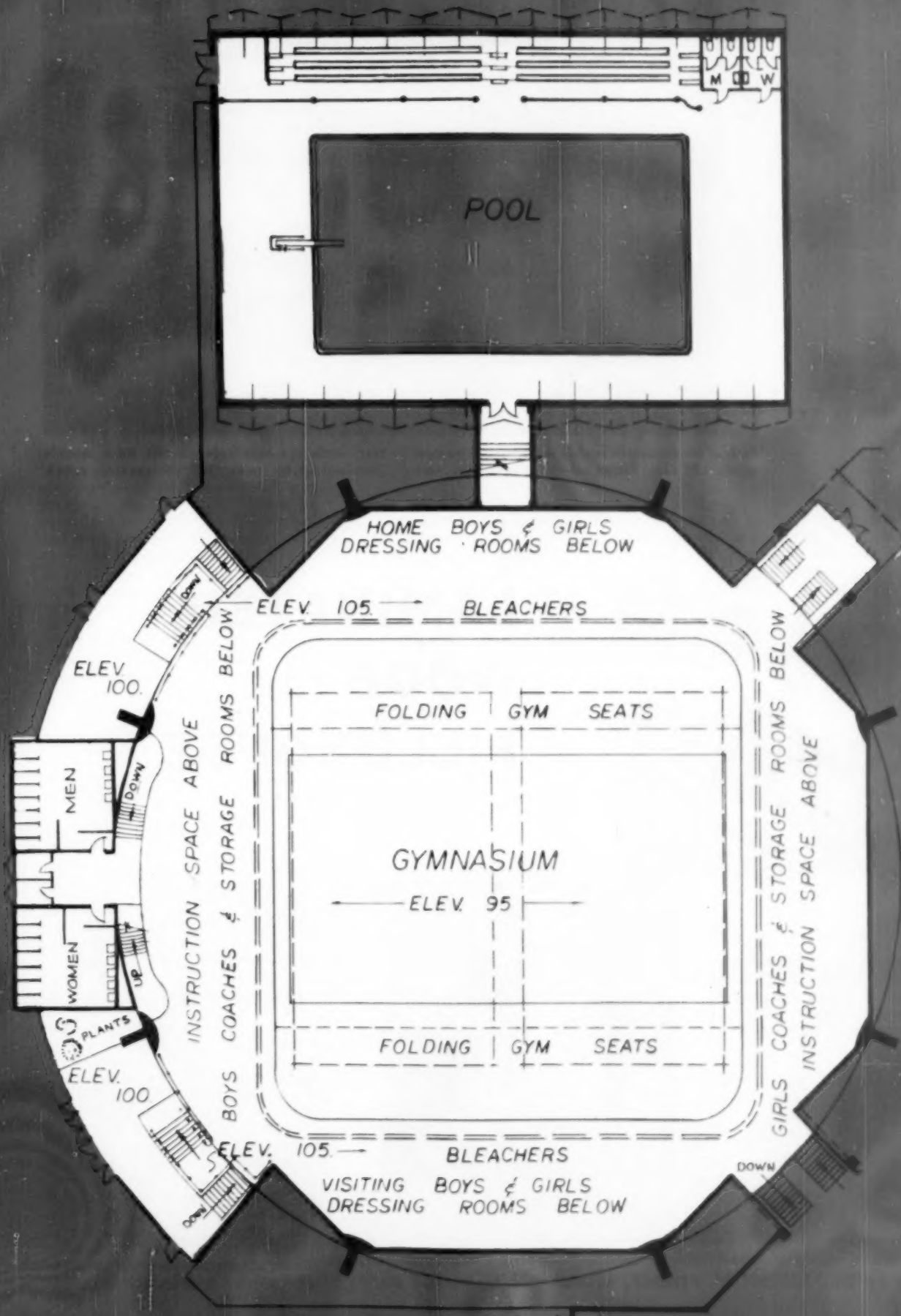
stitutes were hardly the answer to permanent problems due to multiply, and with the "long look" so essential to school planners today, the board initiated a master program for the next 20 years—a program directed toward the achievement of a superlative educational system by the accumulation of nothing but excellent components, and geared for accelerating rapidly to catch and surpass needs as funds increased.

Thus it was that the overall planning of the first Western Heights High School, ultimately to be a \$2,000,000 school plant, began when the bonding capacity of the district was less than \$200,000! That foresight and faith paid immediate dividends. Less than two years after this preliminary planning, the construction completed \$300,000 worth of classrooms, and the district is now preparing to launch the third stage, a \$900,000 addition to include the gymnasium, and other athletic facilities.

Probably the most distinguishing element about the Western Heights
(Continued on page 79)

By JACK L. SCOTT & ASSOCIATES, Oklahoma City, Okla.



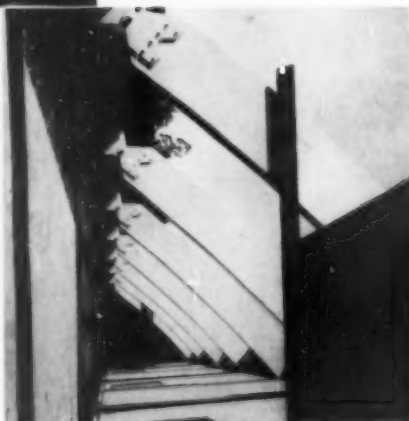




Each of nine wooden arches weighs 12 tons and spans 220 feet. Fieldhouse covers 180 by 160 feet, with specially treated dirt floor, and is illuminated by over 300 fluorescent tubes.



Exterior views of the Humboldt Fieldhouse showing how the girders are set in concrete anchor blocks that are spaced 20 feet apart.



LAMINATED WOOD FIELDHOUSE

THE Division of Health and Physical Education at Humboldt State College, Arcata, Calif., is convinced that the practical solution to difficulties confronting the teacher-training, service, intramural, and athletic programs with regard to facilities has been solved with the erection of a fieldhouse.

The College is situated on the North Coast area of California in the midst of the Redwood Empire and enjoys a mild, if moist, climate. Forty-nine per cent of the days of the winter months finds a fall of .01 of an inch of more precipitation.

This, combined with the time required for outdoor fields and courts to dry, dictates that many activities which are normally held out of doors in other regions of California must, of necessity, be transferred to indoor areas during this season. It was upon this basis that the College secured appropriations culmi-

By DR. JOSEPH M. FORBES, Humboldt St. College, Arcata, Cal.

nating in the erection of the first fieldhouse in the state.

The fieldhouse is of wood construction and covers 180 x 160 feet, a little larger than half a football field. The dirt floor is treated with CaCl_2 to retain moisture to prevent its becoming dusty.

There's no heat in the building. The area is illuminated by over 300 fluorescent tubes, yielding 25 foot candles at four feet from the floor.

The building is supported by nine laminated arches, each weighing 12 tons and said to be the largest laminated wood arches in use in the United States. The span of each arch is 220 feet, with a clearance of 23 feet at the sides and 55 feet at the center.

Each girder is set in concrete anchor blocks spaced 20 feet apart. The wooden girders were constructed three hundred miles distant and shipped in half arches by flatcar to Arcata. Five railroad flatcars were required for each shipment of sets of six half arches.

Inside the building a four-lane indoor track with banked curves has been constructed around the perimeter. At present this track is of rolled clay. But, after experimentation with proper curve banking, it's contemplated to surface the track permanently with asphalt and rubber.

Golf driving cages and baseball batting practice nets are raised for storage and lowered for use by powered winches. A pitching machine assists in baseball hitting sessions.



Exterior view of fieldhouse and reinforced concrete natatorium at right. Buildings are connected with covered walkway for rainy day convenience.

An archery range has been constructed along one end by installing a back drop of straw against the wall and utilizing mobile tripods and targets.

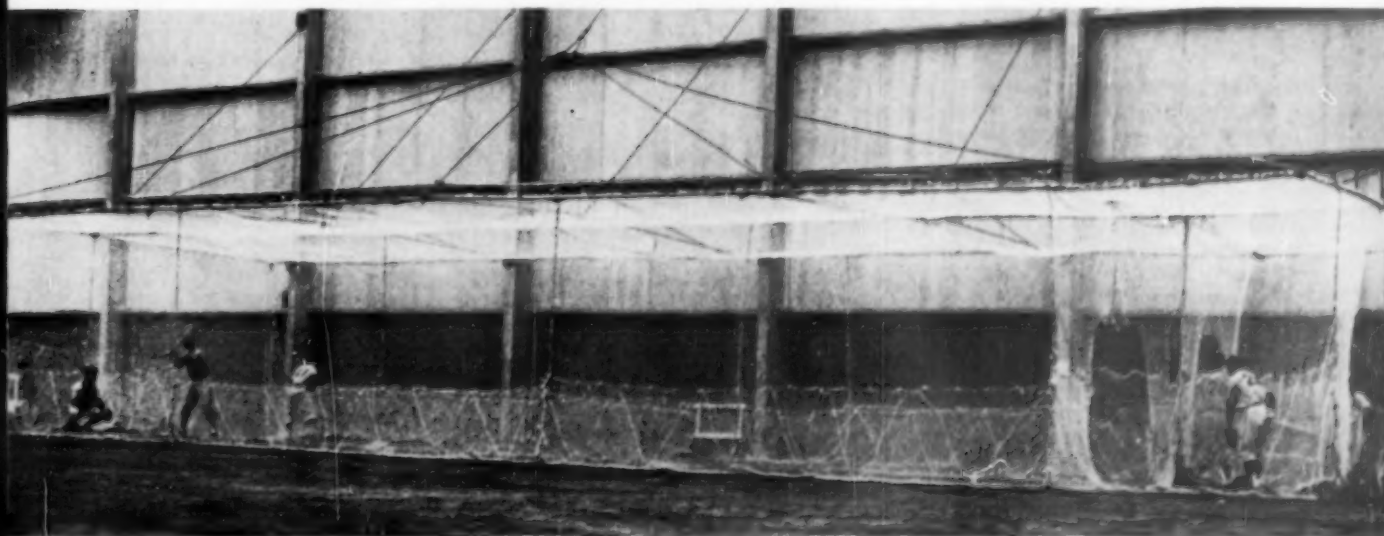
The area is large enough for a regulation baseball diamond for in-field practice, and the roof is high enough for football punting. The center area has been kept clear for team sports classes in field hockey, speed-a-way, soccer, softball, etc. Jumping and vaulting pits are placed along one side of the indoor track.

The facility was constructed primarily for instructional use, although intercollegiate practice and intramural sports enjoy full use of

the fieldhouse. Playdays, indoor track meets, and sports conferences are expected to furnish further use.

The men's gym is adequate at present to handle basketball crowds, but future use of the fieldhouse with portable bleachers and court remains a possibility.

Provision has been made to enlarge this structure at a future date when enrollment dictates. This facility, constructed at a cost of approximately \$200,000, is a feasible solution to a problem which couldn't be met by construction of additional gym space, and it's proving to be much more economical and practical than the development of additional fields.



Baseball batting cage can be raised for storage (folding flat against side of fieldhouse) or lowered for use by powered winches. A pitching machine assists in hitting practice. The fieldhouse is large enough to house a regular diamond.

STEEL Moving STEEL Growing

PERHAPS the most astonishing transplantation in sports-facility history occurred last year, when The Pennsylvania State University disassembled its stadium, stacked the parts on trucks, carted it a mile and a half to a prepared site, then put it together again, adding 15,000 new seats!

This amazing project is a tribute to long-range planning and modern industrial know-how. The story goes back to 1934, when the Penn State planning board decided to replace its wooden bleachers with a permanent type of grandstand. Knowing that:

1. The field site would eventually be employed for new academic buildings;

2. The growth of the school would eventually necessitate an increase in the stadium capacity; and

3. Safety, comfort, and convenience in seating were essential . . .

The planning board decided that only through steel could they economically satisfy their requirements. Only steel could (a) provide the permanent installation for the present, (b) the mobility when relocation became necessary, (c) the versatility for expansion, and (d) the desideratum in durability and comfort.

Penn State has been reaping the harvest of its wisdom for 25 years. The Pittsburgh-Des Moines Steel Co. was brought in and constructed a 20-row all-steel deck grandstand seating 2,400. Over the next five years, they kept expanding the stadium in width and depth, pushing the seating capacity to 16,400.

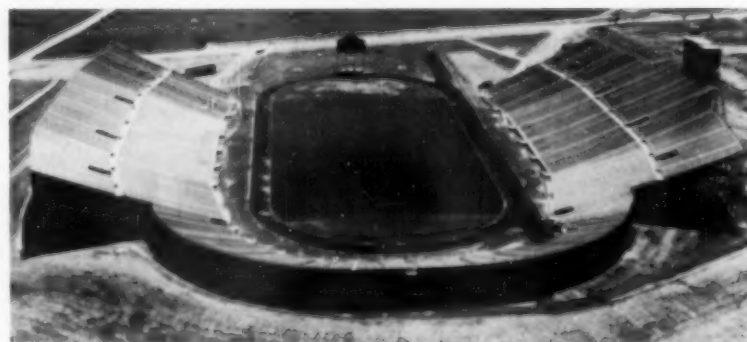
In 1948 and '49, they added 13,100 more seats, plus a four-story steel press box. Penn State could



ORIGINAL STAND (1934) . . . a 20-row all-steel deck grandstand seating 2,400 set up on the west side of the Pennsylvania State stadium.



15 YEARS LATER (1949) . . . after continual expansion in width and depth, the now horseshoe-shaped stadium can accommodate 30,000 spectators.



AND TODAY (1961) . . . after being moved one and half miles and further expanded, the handsome steel deck stadium now has a capacity of 45,000.

now boast a modern, compact stadium accommodating 30,000 fans.

The foresight of the Planning Committee was climaxed in 1959. With the rapid growth of the University, many new academic buildings and a larger stadium became mandatory. As foreseen in 1934, the site of the current stadium, at the edge of the campus, provided the most logical spot for the new academic buildings. The stadium would have to go.

After a comprehensive study, it was decided to relocate the stadium to the northeastern edge of the campus, a mile and a half away. This massive project called for the ultimate in planning and timing.

The construction had to be undertaken in a way that wouldn't interfere with the athletic schedule.

In short, the dismantling of the stadium couldn't begin until after the 1959 football season, yet the new plant had to be ready for the 1960 commencement exercises on June 1.

Work began immediately on the grading, foundations, team locker rooms, etc. for the new stadium. In mid-July, the steel for the 15,000 new seats began to arrive and was immediately assembled. By late October, most of the work on the 30 new rows had been completed.

On Monday, November 16, 1959, (Concluded on page 85)



Waterbury, Conn.

4400 seats



Coraopolis, Pa.

3600 seats



Norfolk, Va.

3000 seats



Jennings, La.

1850 seats



Quakertown, Pa.

1170 seats



Long Beach, Calif.

2000 seats

Dayton, Ohio West Stands 5000 seats



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of low-cost
seating comfort*

—FOR SCHOOLS OF EVERY SIZE

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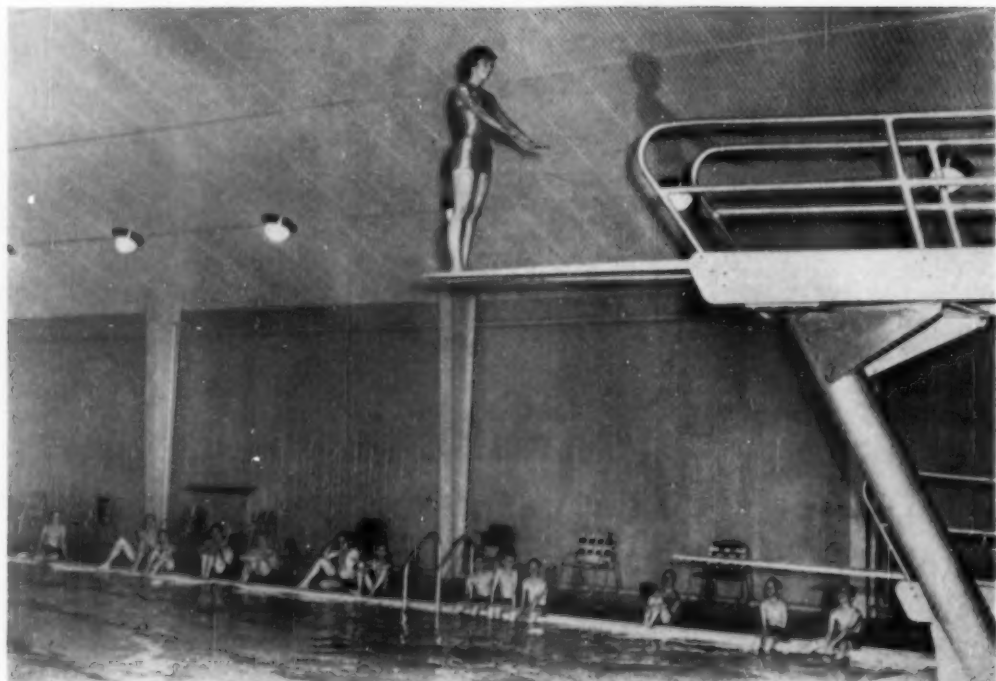


Pittsburgh-Des Moines Steel Company

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Other Sales Offices at:

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BALTIMORE (28)	Curtis Bay Station	DES MOINES (8)	916 Tuttle St.
NEW YORK (17)	Suite 2790, 200 E. 42d St.	DALLAS (1)	Suite 1716, Southland Center
CHICAGO (3)	467 First National Bank Bldg.	SEATTLE (1)	Suite 307, 309 Wall St.
EL MONTE, CAL.	P. O. Box 2012	SANTA CLARA, CAL.	606 Alviso Road
	DENVER (2)		323 Railway Exchange Bldg.



Everything in this ultra modern natatorium— and pool, down to the bathing suit on the model from the walls, ceiling, diving boards, ladder, poised on the board—is made of aluminum!

All-Aluminum Natatorium

ALUMINUM is really in the swim these days. The Westwood Country Club in Indianapolis, Ind., recently opened what is believed to be the first all-aluminum "natatorium." The pool and the walls, roof, and ceiling of the building which houses it are all aluminum.

Deck equipment and accessories such as piping, ladders, diving board, and chairs also are made of the light metal. An estimated 87,000 lbs. of aluminum were used in the facility—approximately 15,000 in the pool and 62,000 in the building and related equipment.

By using prefabricated aluminum components for both building and pool, the club saved many thousands of dollars in construction costs, according to Jim Clark, veteran swimming coach who is general manager of the club.

"We also figure to save about 25% in maintenance and operating costs," Mr. Clark says. The pool and the building won't require painting for many years, and there's no likelihood of rust, rot, cracking, leakage, or seepage. With the unique aluminum design, all water drains back into the pool, and it won't be necessary

to close down the pool in summer for repairs.

Heating costs will be held to a minimum because of aluminum's insulating qualities and the elimination of windows and outside entries. Special filtering and condensation equipment uses aluminum piping and insures a constant temperature without the uncomfortable humidity often found in indoor pools.

The aluminum gutter along the edge of the pool is constructed so that the wave action caused by diving is absorbed at the pool wall, eliminating backwash. As a result, the pool is expected to be one of the fastest racing pools of its kind.

COLOR SCHEME

The building, constructed of insulated Monopanel panels manufactured from Reynolds "Colorweld" aluminum by Butler Mfg. Co., is 60 x 112 feet. The exterior is forest green, and the interior is made up of green, whites, and browns.

The interior ceiling is made of perforated acoustical sheet, which provides a modern, decorative effect

and at the same time holds down the noise level.

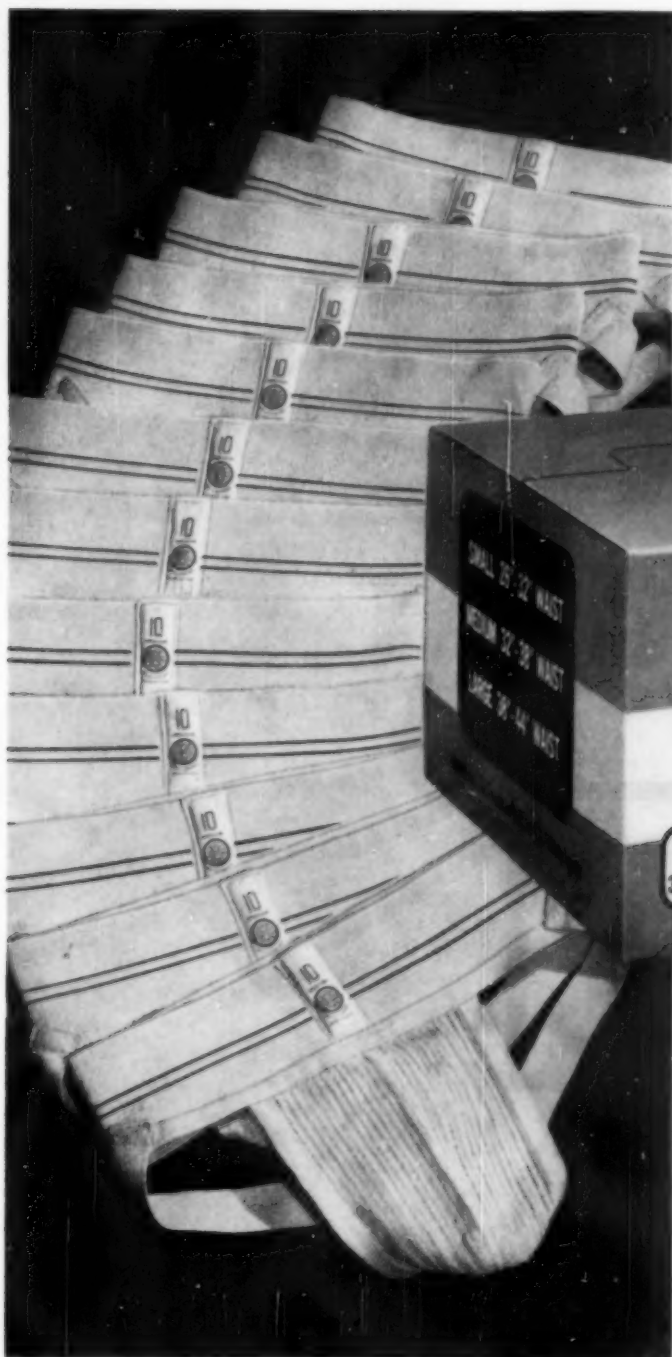
The 36 x 75 foot pool itself was designed, engineered, and built by Chester Products, Inc. Though the firm has built many aluminum indoor and outdoor pools across the nation, this is the first ever housed in an aluminum building.

The sidewalls are made of 3/16 and 1/4 inch gauge aluminum plate. The bottom is aluminum plate fabricated in 10 foot sections. The sheet and plate were lap or butt welded as required. For the sidewalls and bottom, aluminum alloy #5050-H34 was selected. The anchor sockets in the ladders are alloy #356-T6. Extrusions and pipe are 6063-T6.

The entire pool shell has been painted, and the manufacturer estimates that it won't have to be repainted for another five years. Conventional pools ordinarily require patching, caulking of joints, and repainting every year.

People contemplating indoor pool construction will find that aluminum will cut initial construction costs, sharply reduce maintenance, and achieve extra insulative protection.

Another reason to buy **BIKE®** Bulk Pack!



Bike #10 now color-coded
for easy sorting—and
3 ways better than before!



1. New shrink-resistant pouch
2. Sturdier, longer-wearing webbing
3. "Feathered" edges to reduce irritation



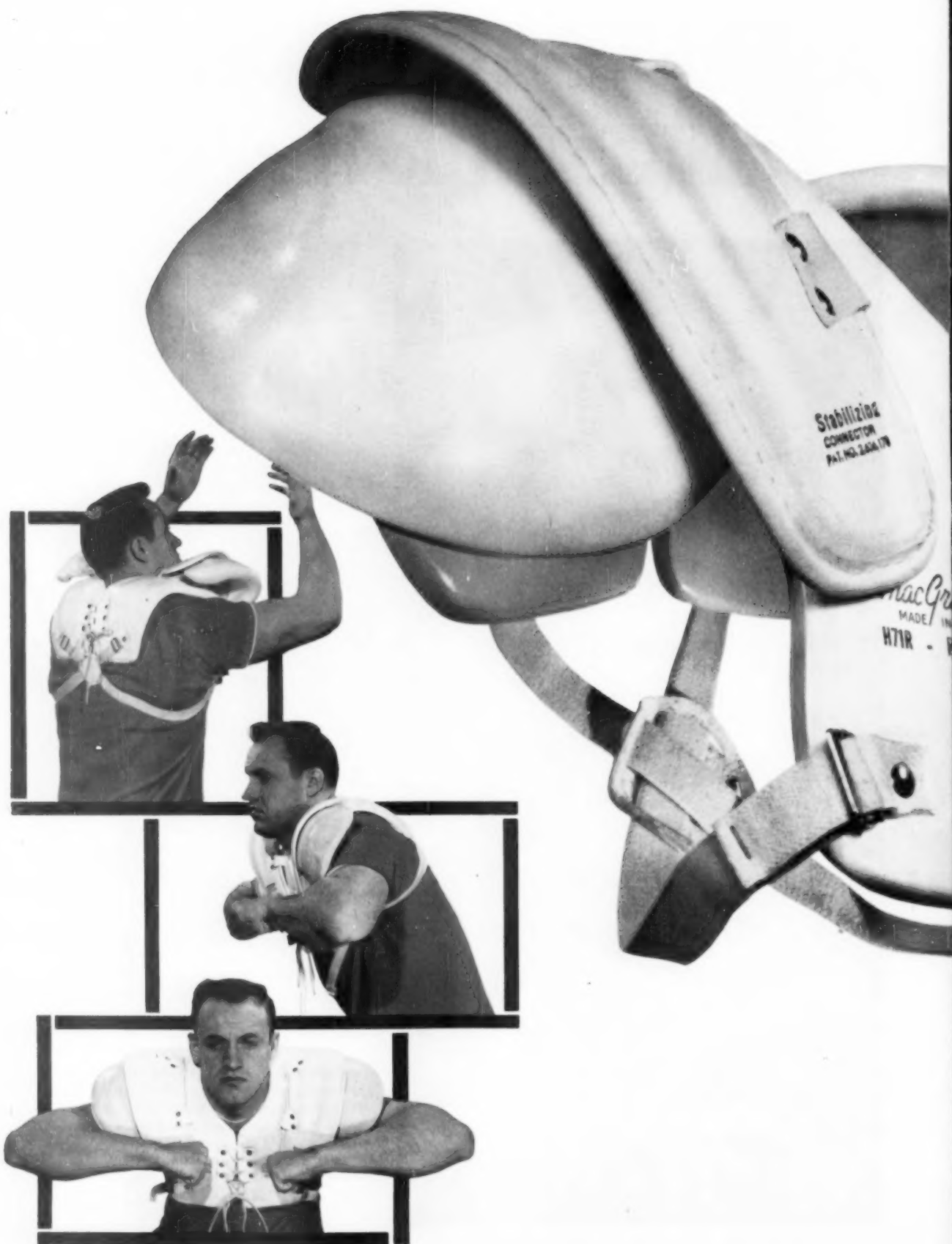
CHEAPER BY THE DOZEN!

Now Bike #10 supporters in the Bulk-Pack are a bigger bargain than ever before. They're color-coded for faster, easier sorting and issuing. They're newly improved not only to last longer, but to be more comfortable for the wearer. And because they're cheaper when you buy them by the dozen, they're easier on your budget. A fact that a cost-conscious school board will like, too.

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MacGregor's exclusive new shoulder pads with

LATERAL STABILITY

make all other shoulder pads out-of-date!

Here is the first shoulder pad *specifically designed* for modern football. MacGregor has developed entirely new molds to give shoulder pads contour-fit—and to give football a new concept in protection.

MacGregor has completely redesigned shoulder pads, providing more protection to the collar-bones and breast-bone. This new design creates *Lateral Stability, allows greater mobility, and provides increased protection and agility, more realistically fitting today's blocking and tackling practices. And it positively qualifies as the best protection available to the modern game of football.

A simple, fool-proof arrangement of straps keeps these new pads in position for play at all times. This places support well beneath the arms and near the middle of the back, perfectly balancing the pads, keeping arms and shoulders free, and virtually "cocking the gun" . . . when arms are brought forward in blocking position, the pads are there to do their job. Torsional stabilization is the secret . . . the straps cross in the back, giving diagonal support; pull on the lower left side at the rear is transmitted to the upper right, and so forth. *Lateral Stability keeps them where they belong. And the radically new design provides a wider blocking platform, more blocking surface—no recoil—improving blocking and tackling efficiency.

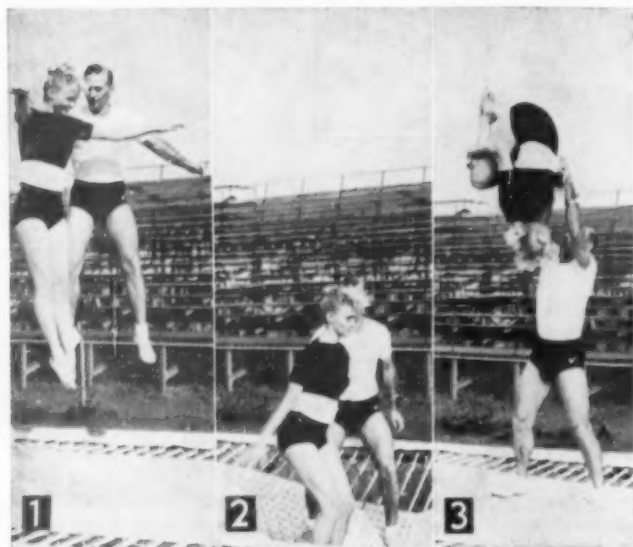
Not only in design, but in materials are these pads the best protection in the game. Improved materials for better protection are placed over vulnerable points. Stronger coating—MacGregor's Dura-Cote—makes MacGregor's exclusive Absorblo[®] even more durable. This great combination of perfect design and the finest materials makes MacGregor's new shoulder pads with *Lateral Stability by far the best protection the game has ever known.

MacGregor's newly designed shoulder pads with *Lateral Stability are on display at your MacGregor dealer's showroom. Stop in, or call, today. Give your team the best protection, and the most efficient blocking support, they have ever had.



"Wherever you see good sport, you see MacGregor"

*Patent No. 2,785,407



(1) Bouncing in unison with instructor grasping towel around student's waist; (2) student ready to take off while spotter kills bounce; (3) spotter aiding spin on back somersault.

On-the-Bed Spotting for Rebound Tumbling

By ERIC L. HUGHES, Gymnastics Coach, U. of Washington

ONE of the most important keys to the success of a rebound tumbling program is to give performers a sense of security as they progress to the more advanced stunts.

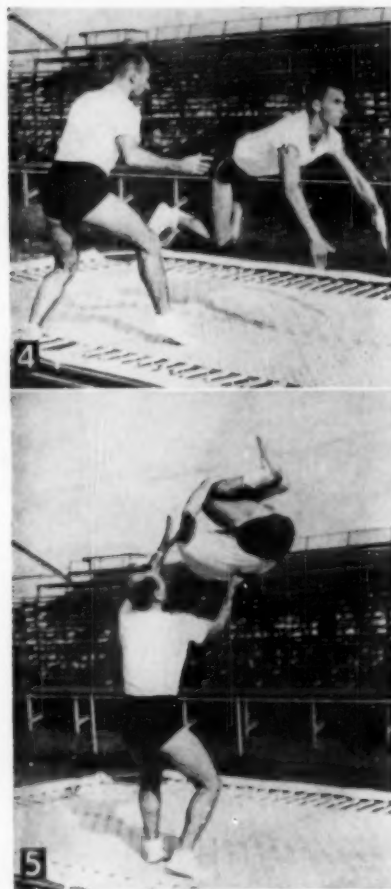
This can be accomplished, in part, by careful and competent spotting. A harness or belt suspended from the ceiling is a necessary item of spotting equipment for the teaching of advanced rebound tumbling.

Students also feel more secure if spotters are placed around the edge of the apparatus to prevent a possible fall to the floor.

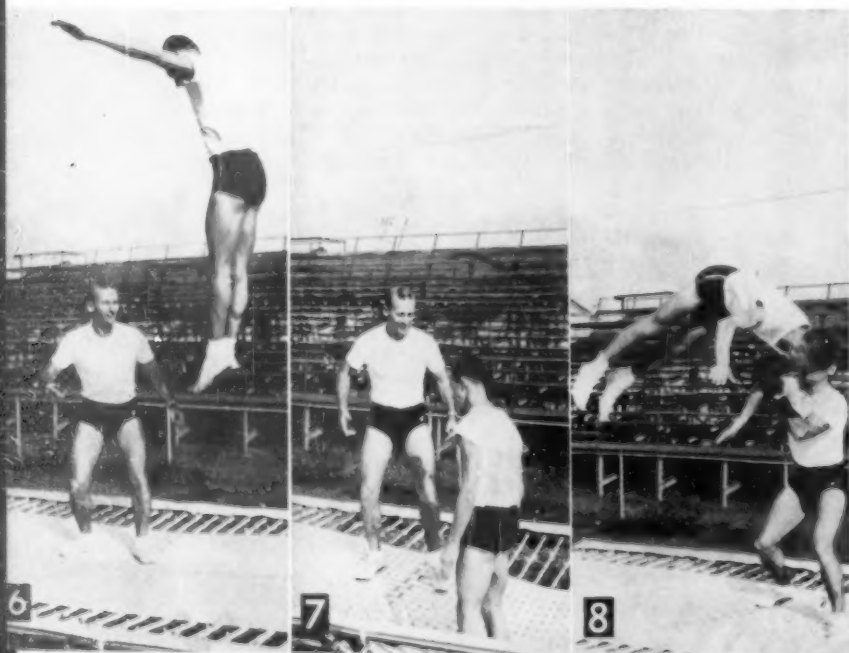
Our purpose here, however, is to describe a less common, yet most important, method of spotting—spotting while standing on the bed of the "bounding table."

The ability to remain on the bed and assist a learner is quite difficult and requires considerable practice on the part of the instructor. The time involved, however, is certainly worthwhile, as many movements can be taught far more easily from the bed than by any other method.

The secret in this spotting technique is to make yourself "weightless" during the time the performer is in contact with the bed. Adding to his height is also desirable for some stunts. This doesn't require an anti-gravity suit or an elevator, but merely good timing and quick reaction on the part of the spotter.



(4) Instructor ready to step from frame to bed; (5) performer somersaulting and instructor assisting on the bed.



(6) Spotter ready on bed; (7) spotter in act of "punching" bed; (8) assisting performer on a borani.



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 maintenance problems*

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 who offer you free personalized technical service**



LASTINCOTE #7® gym floor finish gets endorsement of Levittown School Superintendent John A. Mongon (center). Meili reminds Coach Joseph Diminick (right) that long-lasting, easily-maintained Lastincote #7 preserves natural wood finish—without glare—won't darken, reduces scuffs and rubber marks.



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REFRESHMENT PROFIT CHART

Item	Selling Price	Profit	Cost of Eqp.
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Sno-Kones	10c	8c	149.50
Cotton Candy	10c	9c	275.00
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There are three ways in which "on-the-bed" spotting techniques are used.

1. **Bounce with the student during his preliminary bounces and then "kill" your motion as the performer takes off for his stunt.**

This permits you to keep your feet in contact with the bed while spinning, lifting, or catching the performer.

It takes considerable practice to be able to bounce at exactly the same time as the student. The effectiveness of this spotting technique isn't greatly reduced, however, if the instructor is only slightly out of time.

Grasping the performer's clothing or a towel that has been placed around his waist, not only makes it easier to control the performer but has the effect of partially locking the spotter to the performer during the preliminary bouncing. Before actually trying to spot a stunt, the instructor should practice this bouncing technique until he's sure he won't interfere with the student's take-off.

Some signal must be given by either the instructor or the student so that the instructor's bounce is stopped as the student goes for the stunt. A good method is to count the bounces, with "three" being the signal to do the stunt.

Learning to "kill" the motion also takes a certain amount of practice. The bounce is stopped or killed by flexing the knees and hips upon coming into contact with the bed. This gives the spotter a weightless effect during the time the student is using the bed on the take-off for his stunt.

This method of spotting is pictured in Photos 1, 2, and 3.

Photo 1 shows bouncing in unison, with the instructor grasping a towel wrapped around the student's waist. Photo 2 shows the student at the time of take-off for a back somersault, with the instructor in the act of killing his bounce.

Photo 3 shows the performer slightly beyond the height of the somersault. The instructor has just aided the performer's spin with a push under the lower back with his left hand, and is now ready to lift with his right hand and help control an under or over spin with his free left hand.

2. **Balance on the metal frame while the performer is taking his preliminary bounces, and then step onto the bed after the performer takes off.**

This is the simplest method of "on-the-bed" spotting to learn. It's usually used, however, as the second step in the teaching procedure after

GYMNASTICS coach and assistant professor of health and physical education at the University of Washington, Dr. Eric Hughes is also vice president of the National Assn. of Gymnastic Coaches, gymnastic chairman of the Pacific Northwest Assn. of the AAU, and a member of the National AAU Gymnastics Committee.

the student has partially learned the stunt. The spotter must wait until the performer is completely free of the bed and then step forward very quickly.

In Photos 4 and 5, the performer is attempting a cody. In Photo 4 the instructor is ready to step from the frame to the bed. Photo 5 shows the performer somersaulting and the instructor assisting on the bed.

3. **Stand on the bed close to the performer before and during the stunt.** This is the most difficult of the three techniques to learn.

The instructor stands on the bed in readiness with flexed knees and hips. As the performer starts his bounce, the instructor "punches" the bed by rapidly extending the legs. As the student makes contact with the bed again, the instructor quickly flexes at the hips and knees, thereby momentarily removing his weight from the bed. By punching the bed harder, thus lowering it further just before the student makes contact, increased height can be produced for the performer.

This principle or timing action has long been used by circus acrobats while working double and triple routines on the bounding table. In order to perform jumps or somersaults from the bed to the shoulders of an understander also on the bed, the "punch" must be timed with great precision. I personally learned this technique while working as a professional entertainer and have found the skill to be most valuable in teaching.

In Photo 6 the instructor is standing on the bed in readiness. In Photo 7 the instructor is in the act of "punching" the bed. In Photo 8 the instructor is assisting as the performer completes a barani.

Before spotting the barani in this way the instructor should be sure he's proficient at doing a round-off with a "two-foot" take-off on the bed of the bounding table.

The application of these three spotting techniques is extensive. The stunts photographed are just a small sample of the many movements that can be spotted on the bed.

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TOP Protection at All Times

IN THE past few years, the protective helmet has become recognized as a valuable and integral part of the baseball uniform, just as essential as the uniform shirt, pants, or warm-up jacket.

Gone are the days when players mocked those who wore the helmet at the plate, and jokes about the "minor's hats" and "Fort Benning bombers" are no longer funny. Players now realize the terrific value of the baseball helmet, and even the "old timers" have been forced to admit it isn't sissy but plain common sense to wear them.

All big league teams are required to wear protective headgear at the plate, and some clubs want them worn on the bases as well. Several minor leagues have made the protective cap mandatory both at the plate and on the bases, and many high school athletic associations have made the helmet compulsory for all batters.

The value of wearing a helmet at the plate is so obvious it needs little discussion. Many players fail to realize, however, how valuable the protective cap can be when running the bases or playing the field.

At Wake Forest we wear the protective helmet at all times. We don't even issue cloth caps! We're convinced, for many reasons, that the helmet should be the only cap used by a baseball team.

SAFETY AT THE PLATE

As previously mentioned, the value of the protective helmet at the plate is universally accepted and encouraged. Many players have escaped serious injury when hit in the head by a pitch, and the number of injuries and even fatalities prevented by the helmet cannot be counted.

The quickest and most complete team "conversion" to the protective cap we ever saw occurred after one of our helmets was smashed by a real good fast ball. The batter was only momentarily stunned and stayed in the game. If we had any skeptics before that pitch, certainly none re-

mained after we viewed the demolished helmet. In fact, the opposing team was so impressed they ordered helmets the next day, even though the season was already half over!

Another big value of the helmet at the plate, and one that many hitters will admit privately if not publicly, is the psychological lift you get from having your head protected. It takes a hitter of tremendous courage not to give ground when some wild rookie is throwing aspirin tablets on a rainy night under Class D lights; and many hitters frankly admit the helmet helps them "stand in there" with less fear of being injured.

The great majority of players in all professional baseball wear the protective helmet on every trip to the plate.

SAFETY ON THE BASES

The protective helmet has proved to be just as valuable on the bases as it has at the plate. Many teams now make the wearing of the helmet mandatory on the bases, and for good reason. Figures available to the American Baseball Cap Co. indicate that 74% of all head injuries in baseball occur on the bases!

One of the most dangerous situations occurs on a double-play attempt where the lead runner is steaming full speed for second base and the pivot man is tagging the bag and throwing right into the runner's path to first base. Many times the pivot man will make the throw with the runner less

than 10 feet away, and at this distance the speed of the ball can be tremendous.

Since pivot men are coached to avoid looking at the runner and to throw normally to first base, regardless of where the runner is—many "old pro" infielders are more blunt about it; "Buddy," they'll say, "if that runner doesn't slide he may knock you into left field, so aim between his ears and make him slide!"—the runner is in a pretty tough situation. He must get close enough to the base to slide properly and try to break up the double-play attempt. But at the same time he must slide before the infielder throws the ball or risk being beamed.

Many fans will recall the incident in the 1934 World Series when Dizzy Dean was hit a glancing blow on the forehead on such a double-play attempt. An inch or so lower and "Ol' Diz" wouldn't have had the chance for that 11-0 shut-out in the seventh game that gave the Cardinals the world's championship.

Another base-running situation where head injuries often occur is the pick-off play. Since the head-first dive is the quickest way for the runner to return to the base, and since the pitcher will be trying to throw the ball in the vicinity of the infielder's right knee (right where the runner's head will be), it's understandable that a throw might occasionally hit a runner in the head.

Some players (watch Gil McDougald, for example) will actually dive back to a base with one or both hands on the back of their head. In fall practice this year, when our helmets were being reconditioned and our team didn't wear them, we found a surprising reluctance on the part of some boys to dive back to the base on pick-off attempts.

Since the same boys showed no hesitation doing this last spring, we can only attribute it to the fact that they weren't wearing protective caps during the fall. Just as in batting, the wearing of the protective helmet on the bases has psychological as well as safety advantages.

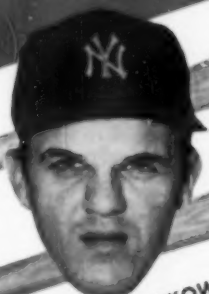
Another occasion on which the wearing of the protective hat is an advantage, is that on a throw to a base when the runner is sliding. This is especially true when the throw is coming from behind the runner, such as a throw from right field to third base, or from left field to the plate.

By JACK STALLINGS, Baseball Coach, Wake Forest College

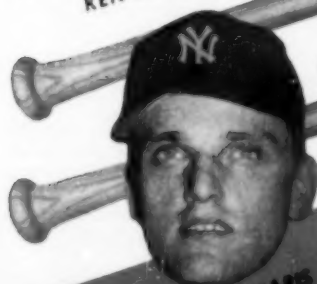
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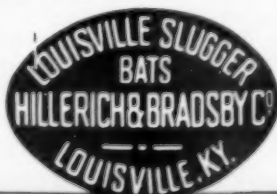


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The pain and swelling in athletes' legs, commonly called "shin splints," has been a bane to coaches for generations. According to a recent report in a leading medical journal, shin splints are "especially prevalent in those who are engaged in basketball and track events where the participant runs on a hard surface."

That's why so many coaches and players prefer the resiliency of Robbins Northern Hard Maple floors. Properly installed, a Robbins Floor "gives" with every step, actually cushions the impact of running feet to protect against shin splints, sore ankles and leg muscles.

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A throw of this type, coming in from the rear of the runner and often bouncing just a few feet behind him, may hit the runner in the back of the head before the infielder can reach out and catch the ball.

These are only three of the many situations in which the wearing of the helmet on the bases can help prevent a serious injury. As pointed out, studies have shown, and our personal experience has proved, that the majority of head injuries in baseball occur on the bases. Hence, the wearing of protective helmets on the base paths is a must.

SAFETY IN THE FIELD

Almost every person associated with baseball realizes the value of a protective helmet at the plate, and most of them realize its value on the bases, but far too few think of the helmet as being necessary in the field. In the first season that Wake Forest wore the helmets exclusively, three incidents occurred that highlighted the value of the protective cap in the field:

1. In the very first game, when many of the players were still skeptical about the value of the helmets, an outfielder ran into the fence while catching a fly ball. The boy's head slid against the pointed ends of the wire at the top of the fence, and two large gashes were cut deep into the fiberglass material. But the boy was completely unharmed!

2. During practice one day, an extra infielder ran across the base-paths into the flight of the ball being thrown to first base. He was hit just above the temple on the left side, with the force of the ball actually cracking the helmet—but the boy was unhurt!

3. During batting practice one day, three players were taking pepper practice deep in the outfield when a batter hit a "tape measure" drive that hit one of them squarely on top of the head. He wasn't even stunned, and what could have been a bad injury turned out to be a good laugh for the team.

To be sure, these three incidents were unusual. But in baseball the "unusual" is commonplace. We've seen many injuries that could have been prevented by the wearing of a helmet in the field.

The pre-game warm-up period, for example, is fraught with risk. While one team is on the field taking infield and outfield practice, the other is usually warming up on the sidelines. Every overthrow is a "low bridge" and "look out" affair, and someone is always likely to get skulled.

EXCLUSIVE WEAR OF HELMET

Aside from the safety factors involved, the exclusive use of the helmet is desirable for other reasons. One is durability. When worn at all times, a protective helmet should outlast a cloth cap by three or four to

one. A cloth cap usually lasts only one season, while a helmet should be good for three or more years.

Many coaches say the most damage to their helmets comes from "sailing" them across the infield, with a bounce or two, to the batter coming up next. If every player is equipped with a helmet, this will no longer pose a problem, and the helmets will last much longer. The plastic or fiberglass itself doesn't wear out, and the lining can be easily reconditioned for many more years of service.

Another desirable feature is cost. We've actually found the helmet to be more economical than buying cloth caps every season. The cost of a helmet is 2-3 times that of a good cloth cap, but since our helmets are going into their fifth season, and are still in good shape with just reconditioning, we feel this is quite a saving.

Still another desirable feature, at least to some people, is looks. Many fans think the helmet, especially the felt finish model, is a sharp addition to the uniform, and like the way it "dresses up" the squad. Others may not think the helmet actually improves the looks of the uniform. But few, if any, people think the helmet distracts from the appearance of our squad.

ORIENTATION IS EASY

Many teams are now wearing, or contemplating wearing, protective caps exclusively, while other teams aren't sure this is desirable. One of the most common arguments against its exclusive use is "The boys can't get used to them."

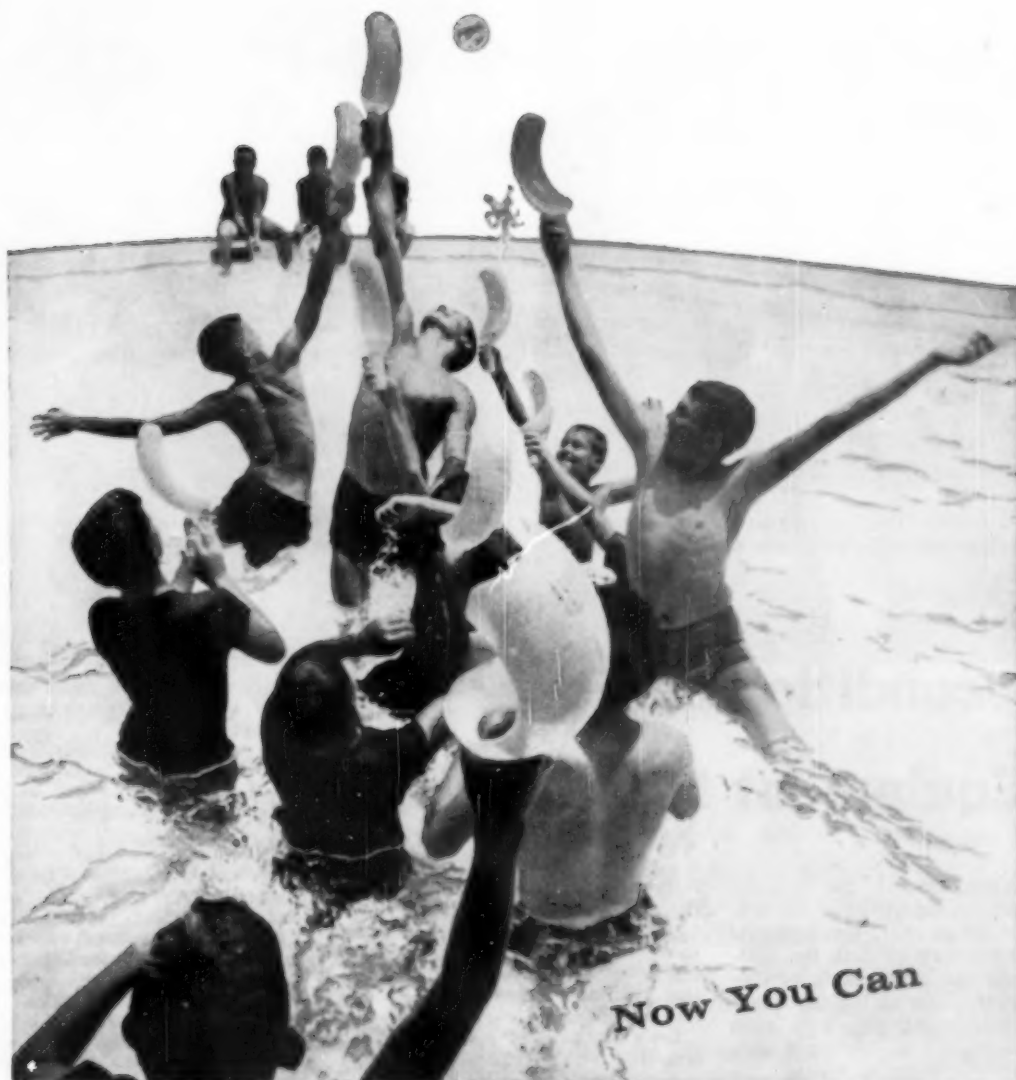
We've found this to be no problem at all. Returning players pay no attention to the helmets, and new boys get used to them in two or three days. Since they're not heavy, the boys quickly forget all about them.

We wear the helmets at all times, on the bench as well as in the field, in practice as well as in the games, and it doesn't affect the players' performances a bit. About the only fault, as one boy put it, is "You can't stuff this cap in your back pocket like the old timers used to do."

A PART OF THE UNIFORM

While the exclusive use of the protective helmet cannot guarantee the elimination of head injuries, "goose eggs," and headaches, we do believe it's a very valuable and necessary part of the baseball uniform; and we consider it just that—a part of the uniform, not extra equipment or an added attraction.

The value of the protective cap on offense has been pretty well-established, and we believe it has enough additional advantages to make its usage in the field practical. We're "sold" on the protective helmet, and think it has enough desirable qualities—safety, psychology, durability, cost—to warrant its exclusive use.



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BEFORE . . . as the equipment usually looks upon delivery to the reconditioners after the season.



Photos by Raleigh Reconditioners
AFTER the magic of reconditioning has wrought its wonders, the equipment will look brand new.

Reconditioning For Equipment Maintenance

THE condition of the athletic equipment, especially in the major sports, often plays a substantial role in the success of both the individual and the team. Although an athlete isn't going to let the question of equipment stop him from getting out there and playing, he's bound to be affected by it.

Consciously or not, he's going to make a mental note of his equipment: Whether it affords him the proper protection, whether it's clean and well-fitting, whether it feels comfortable.

Isn't it reasonable to assume that worn, dirty, and uncomfortable equipment will have some effect on his performance? Not only from the purely physical standpoint, but from the morale angle as well. The boy may well take the condition of the equipment as a reflection of the school's attitude toward the athletic program. This could well have a detrimental effect on performance.

Still another reason for good equipment is the psychological edge it provides over a poorly equipped opponent. Showmanship is another vital factor to consider.

A team must "look good" to draw the crowds.

So everybody agrees that athletic equipment should be in good condition. What's the problem? The problem is time, manpower, and above all . . . money.

Let's see just how serious the problem is.

Let's take football: The average high school program might involve about 75 players. Fully equipped, you have at least \$15,000 invested for original equipment. In baseball the investment is somewhat less. A program embracing about 25 men would cost about \$50 per player. Basketball represents a somewhat smaller investment, although the program would embrace about 20 to 25 players.

Add to this list the many other sports at the varsity level: track, soccer, tennis, golf, wrestling, riflery, swimming, bowling, hockey, and lacrosse, not to mention the more esoteric activities such as skeet shooting and fencing. A typical school would have at least five major sports and a number of minor sports, and on the average the original equipment investment would be about \$25,000, of which football would represent at least 75%.

If this is beginning to sound like

big money, bear in mind we haven't even accounted for intramural competition.

Experience has shown there's only one effective way to protect this investment—by a planned program of professional maintenance. Here's the real problem.

A recent survey has revealed that neglected equipment lasts no more than a few years, and that some equipment must be replaced in a much shorter time. Interestingly enough, the equipment that must be replaced is usually the more expensive items, such as shoes.

Shoes take a great deal of punishment. They're often worn wet, and exposed to mud and perspiration. The latter factor is quite serious, since the acid "consumes" the leather if the perspiration isn't removed from the fibers within a relatively short period of time.

Football shoes today cost anywhere from \$15 to \$20 a pair. So it's easy to see how costly this item alone can be.

Making equipment deliver lasting protection poses a formidable problem for the manufacturer. No other apparel can compare with athletic equipment for hard wear. To solve this problem, the equipment manufacturer must utilize the strongest materials available and design a tremendous safety factor into the construction of each item.

Because of this, most equipment is built to last at least five years. With proper care, however, a good deal of it can last 10 years or more. Only through professional reconditioning can equipment enjoy the full life span intended by the manufacturer.

To give only one indication of how seriously the maintenance problem is considered: A top-rate college set up a small reconditioning plant, in-

By **NICK MAYER**, New Rochelle, New York

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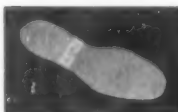
Some 1960 Tennis Court Installations

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cluding about \$25,000 worth of equipment and two men to run the plant on a continuous basis. In addition, they spend about \$1,000 per year with a professional reconditioning service.

Can the average high school afford the "do-it-yourself" approach to equipment maintenance? Some schools are doing it... or, rather, taking an expensive stab at it.

Since football and other major sports equipment is so complex and involves so many types of construction materials—leather, fabrics, wood, metal, etc.—the job of cleaning and repairing is staggering.

Some high schools have hired men to do nothing but take care of equipment. Let's say that even on a part-time basis, these men are paid around \$2,000 to \$3,000 a year. The average high school team cannot afford such an investment, and, as we will soon show, this isn't warranted in the first place.

How about the all-important matter of time? Taking care of the equipment during the football season, for instance, is a full-time job. After the season, it must be collected and classified, then reconditioned, then checked out again to see what has to be replaced.

The average high school coach doesn't have the time for this. His job is to coach and, in most cases, to teach a full day. Even with student managers helping him, this problem cannot be solved, since these are teen-age boys who shouldn't be made responsible for expensive athletic equipment.

A survey of secondary school athletic programs throughout the country has convinced experts in the field that the consistent use of a professional service is the only economical and effective solution to the reconditioning problem.

How does such a service operate?

For each sport, equipment is picked up immediately after the last game of the season and returned at the start of the following season or when the school wants it. During this time, the equipment is fully insured against fire, theft, or other possible damage.

What equipment is covered by the reconditioning service? Nothing is excluded—anything from a football helmet to a girl's field hockey stick is included. In the case of football the service includes not only jerseys, pants, shoes, and protective equipment but even auxiliary items such as football bags, hoods, cheerleader and band uniforms, and dummies.

At the top-grade houses, the service starts with a complete inspection of each piece of equipment for reconditioning method and numbering, eliminating any chance of the school getting back the wrong item. This is a remarkable feat when you remember that the top-grade house may recondition well over a million items every year!

With football helmets, suspensions and padding may be entirely replaced and the shells lacquered and striped

to the school colors. Jerseys and pants are darned where needed.

Every item, regardless of condition, is completely cleaned and sterilized. Moreover, each cleaning technique varies with the particular type of equipment and the material of which it's made. For instance, shoes and other leather goods are treated in a completely different way—with special oil baths, lasting, and natural drying techniques.

Let's take baseball equipment: This will usually include uniforms and catcher's equipment—mask, chest protector, shin guards, and mitt. A recent innovation in this sport is the batting helmet.

Made necessary by the "bean ball," these batting helmets have a suspension system similar to those of football helmets. However, they're made of fiber rather than plastic, and include a certain amount of padding. These are processed for reconditioning in the same manner as football helmets.

Shoes are oil-dipped to revitalize the leather, and spikes and individually lasted and natural-dried inner-soles are replaced where needed. Catcher's mitts are refaced and replaced. Chest protectors are sterilized, cleaned, and refaced. Leather parts that are torn are restitched and webbing is replaced where necessary. Everything made of wool is separately packed in cartons and moth-proofed for storage during the off season.

LEATHER REVITALIZED

Shoes, mitts, masks, and chest protectors are first placed in special polyethylene bags and then stored in moth and mildew proof containers.

Specially developed darning machines and extremely skilled operators are employed to "darn" holes with the precise thread that went into the original product. The better services even match the faded colors of used jerseys or football pants—very often the boys are quite self-conscious about patches being too conspicuous.

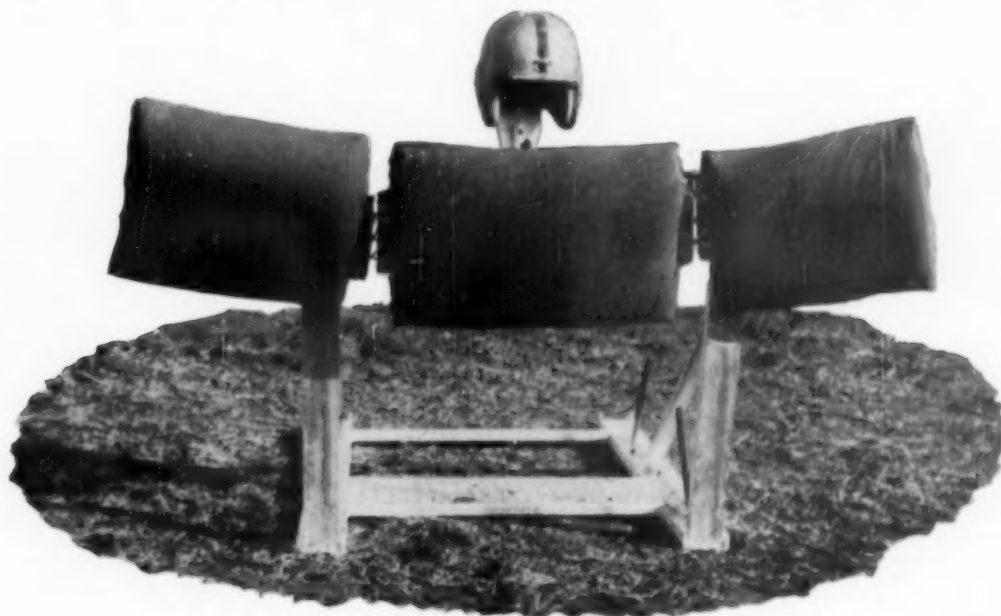
For rapid and economical service, special types of repairing machines are available. Some typical examples are a helmet washer and a machine for pressing and inspecting football pants.

The latter is a weird-looking machine which utilizes a pneumatic principle. The operator places the pants over a mandrel and presses a button which inflates two bags which stretch and at the same time steam the pants into the proper shape!

Since a great deal of metal goes into equipment such as football shoes—for plates, posts and washers—the topflight plant must include a good deal of metalworking equipment which wouldn't be found in a normal shoe repair establishment, no matter how competent it may be.

For instance, there are hydraulic
(Concluded on page 78)

IT'S HERE! IT'S FROM CROWTHER!



AMAZING NEW DEFENSE REACTION MACHINE revolutionizes the drilling of Defensive Linemen



The coach with this machine can simulate by movement of the headgear the following offensive maneuvers: a straightaway charge, pulling or blocking to the right or left, a double team or pass protection.



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THE CROWTHER Defense Reaction Machine actually charges the defensive player, from the right or left, with a powerful angle block. Only the coach knows where the "play" is going, so the player learns to react in a flash, to change the direction of his charge at the last split-second to the right, left, or straight ahead. The Reaction Machine trains him to read the offensive blocking instinctively and to react with hair-trigger speed.

THE CROWTHER Defense Reaction Machine is to defensive play what the CROWTHER 2-man and 7-man machines are to offensive drills.

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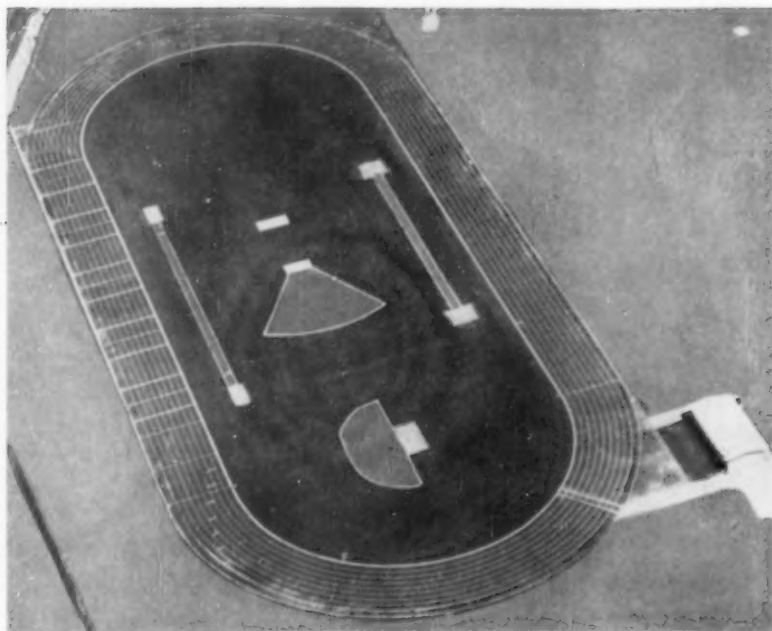
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Wisconsin's magnificent nine-lane quarter-mile track featuring a fibrous, resilient, all-weather running surface and asphalt-composition runways.

WISCONSIN'S Resilient Track and Hand-Tailored Spike

By **THOMAS BENNETT**, Asst. Coach, University of Wisconsin

FROM time immemorial, track construction followed an undeviating formula. The running track was always made of cinders and the approaches of cinders or clay.

Nobody protested. Sure, the cinders and clay were difficult to come by and expensive to process. They broke down easily, required constant maintenance, and frequently were unusable for days after a hard rain.

But the coaches had no choice. What else could they use?

They said it couldn't be done—but Yankee inventiveness finally did it. Several years ago, it produced a new surfacing that has thrust cinders into the shade.

This rubberized or fibrous asphalt composition provides an all-weather surface which is smooth, resilient, stable, attractive, safe, and durable! It reduces maintenance to a minimum and is ready for action only minutes

after the heaviest rain!

For the first few years, the resilient all-weather surface was confined strictly to the runways. Then the University of Florida unloosed a bombshell. In 1958—as reported exclusively in *Scholastic Coach*—Coach Percy Beard installed an entire quarter-mile track made of fibrous asphalt. It scored a smashing hit, and the stamped to resilient-composition tracks is now on.

The fibrous asphalt composition appears under the name of "Grasstex", while the rubberized surface composition is known as "Perma-track" and "Saf-Pla." Manufactured by the U. S. Reclaiming Rubber Co., the rubberized surface is being used on the runways at Princeton, West Point, Boston U., Navy, Miami (O.), Villanova, and the Van Cortlandt Park Stadium, and comprises the entire running track of the Boys Club of America in Wichita, Tex.

THE University of Wisconsin is extremely happy with its Grass-tex hard-surface track. Although it's only a year and a half old, it has proven satisfactory from every standpoint.

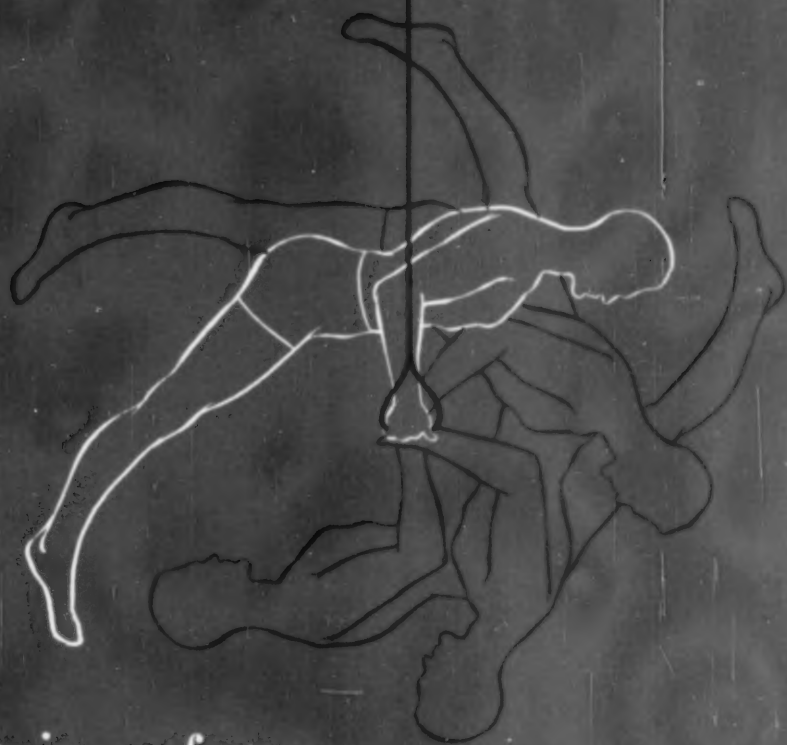
There are many advantages to such a track. Some of the outstanding ones are: Early use of the track in spring, very little up-keep, extremely fast in all weather, and easy on the legs.

Wisconsin's track was the second of this type in the world and the first in a northern climate. Our first concern was that it wouldn't heave during the spring thaw. Working directly with the Wisconsin School of Engineering, the State Highway Department, and a local engineering firm, we received concrete assurance on this score and began construction in the spring of 1959.

With the frost problem eliminated, the track is usable as soon as it's free of snow. Since all lanes and the various hurdle, start, and finish lines are painted on, the entire running track is ready the first day of practice!

Sure footing with good traction on a level surface makes the track extremely fast. The first impression is that the track is hard as a road, but the softness or spring can be felt by pressing down on it with the thumb. There's a very definite "give" to the track, making it easy on the feet and legs. Very few cases of soreness have occurred.

While frost may not get to the track itself, it can do some damage if all the wooden forms aren't removed. The outside edge of our track was raised slightly due to the wooden form being left in over the



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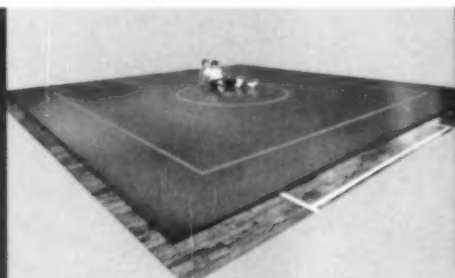


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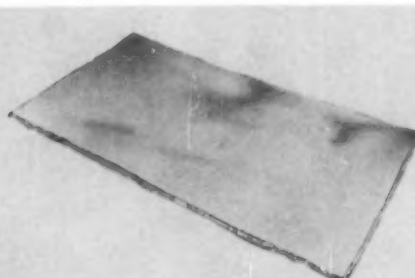
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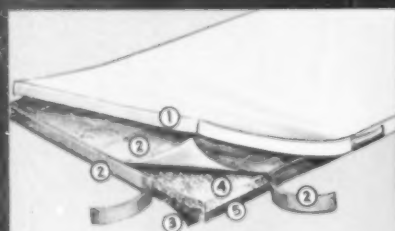
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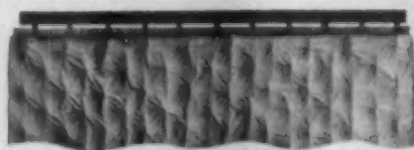
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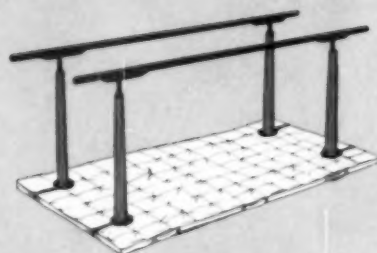
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winter. But a light roller put the edge down in place.

This could have been serious in two ways. First, the track drains to the outside and even a slight raise on the outside edge would have tended to hold the water on the track. Second, it might have broken the base of the track.

Occasionally large holes are punctured into the track, as, for example, when starting blocks are dropped or when a hurdle is knocked over. Such holes are easily repaired with a fluid bituminous material called "weather coating."

The entire track is surfaced with this "weather coating." To fill in holes, it's poured on the track and drawn squeegee fashion across the damaged areas to permit filling. It's important to have "weather coating" always available.

The track is 440 yards around, with 134-yard straightaways. But space is available for a 220-yard straightaway whenever expansion is deemed desirable.

The track boasts nine lanes all the way around, eight of which are 4' wide and one (the inside lane) being 4'6" wide. This provides a total hard-surface width of 39' from inside to outside edges. The curb, made up of laminated Western red cedar, 2" x 4" in size, is laid on the track one foot in from the edge. An outside curb was removed to facilitate drainage.

The pole-vault and broad-jump runways are not made of grasstex, but of a harder asphalt mixture. We found that the board spikes don't hold well enough in grasstex, particularly in the high jump, and heel spikes are recommended to prevent slipping.

Both the pole-vault and broad-jump runways run parallel to the straightaway and are 150' long, 4' wide, and have a half-inch crown. This crown is unnecessary if the runways are slightly above ground level. In our broad-jump runway, the crown was leveled off 10' from the take-off board to bring the runway and take-off board into perfect alignment.

All pit edges, standard platforms, and take-off boards and take-off areas were leveled to comply with requirements and to facilitate the measurement of heights and distances. The pole-vault and high-jump pits are of regulation size, built up and filled with rubber shavings.

The discus circles are concrete, with the throwing area graded to comply with the rules. The throwing direction is north, and the distance from the circle straight out to the track is 210'.



Top: Ordinary indoor board track spike, with 3/16" point. Bottom: Coach Bennett's new indoor grasstex track spike, with 1/8" point.

The shot-put circle is also cement, with the throwing area being of dirt and graded to comply with the rules.

An asphalt hard surface extends 30' out from the high jump pit, with an approach radius of 180°. 10' out from the pit the approach is corrected to dead level through the 180° radius. Grasstex was used here (to correct the take-off approach) without our knowledge, and our jumpers are now experiencing trouble with board spikes.

Our runways are built up over 5" of crushed stone. Then comes 2" of asphalt binder and a 1" asphalt top.

The track itself is built up over a compacted sub-base. On top of this are a 6" macadam base, a 3/4" leveling course, a tack coat, 1/4" grasstex, another tack coat, and 1/8" weather coating.

The compacted sub-base of any track depends on climatical and soil conditions, which most local state highway departments will be happy to determine for you. We were fortunate in having a sandy area which provides excellent drainage.

The track infield possesses a good built-in drainage, electrical, and watering system. Sod was laid over the entire infield, while outside areas were seeded. Sodding the infield was important to help assure the proper grading and prevent washouts.

All lanes are painted on, with

different colors (yellow and white) used to differentiate the hurdles and starting lines. All races finish at one point on the track. After almost two years, our lines are still in good shape. This permanent marking constitutes another excellent advantage of fibrous asphalt or rubberized tracks.

The starting blocks are held in place by thin wall piping set approximately 6" deep. The size of the pipe depends on the pin size of the block. On our track the first hole is set 6" back from the starting line.

Future plans call for building a fence within three feet of and around the entire track... permanent stands built high for good spectator vision... a judges' stand on both sides of the track for clear viewing... and a fence inside the north curve to prevent the discus from slipping out on the track.

SPIKES FOR GRASSTEX TRACK

Use of the common hex-headed board spike on such a relatively soft track material creates large holes in the surface, caused by penetration of the nut. Such holes don't necessarily damage this type of track, yet they do create a nuisance factor.

After trying the hex-head board spikes, it was decided to adapt a spike for use on a grasstex track. Several experiments with various spikes produced the desired item.

On special order, our equipment suppliers altered their board spike, changing the thread to fit the shoes used by the Wisconsin team. The point was shortened to 1/8" in length, while the base of the point was reduced in diameter to 3/8". The flange that held the point into a disc (the disc replaces the nut of the hex-headed spike), was flattened. The result was a spike similar to that used in golf except that the point was smaller.

The disc helps prevent penetration and tends to support weight, while the small point provides traction without deep penetration.

This new spike fits nicely on both types of shoes we use, each of which has a different method of locking the female socket into the sole of the shoe.

One of these shoes has a permanent washer surrounding the female socket in the sole, and here the disc on the spike fits snugly against the washer. (With the adaptation of a rubber sole this year, this spike fits better than ever.)

In some cases the disc will sit out farther, due to the fact that the
(Concluded on page 73)



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Should Athletes Work With the Weights?

By JOSEPH GOLDENBERG, D.C., Physical Trainer, New York University

SHOULD an athlete work with weights? Absolutely! Tremendous benefits may be derived from a sound program of progressive resistive exercises.

The universal gravitation toward weight training is a phenomenon of recent origin. Over the past decade, it has become an integral part of the conditioning program in many sports.

Much has been written about the weight training programs of outstanding athletes. The overall effect has been excellent. Unfortunately, the emphasis has often been wrongly placed. Instead of stressing the exercises, the writers have stressed the amount of weight used in them.

The danger is obvious. The example of the champions might encourage the average athlete to use more weights than he should in the beginning, exposing him to some unpleasant after-effects.

To derive the best results, it's vitally important to understand exactly what you want to accomplish with the weights, and then set a goal for your athletes. In this way they can embark upon a training or conditioning phase intelligently.

Many athletes and coaches believe that weight training will slow an athlete down or will develop the wrong type of muscles for his particular sport. Such thoughts are entirely unfounded. They prove that the individual either possesses little knowledge of the human body or that he's getting his information from an uninformed person.

The transmission of such misinformation by people in authoritative positions has seriously hurt our athletes and is one reason, I believe, why many potentially superior athletes are second best in many sports today.

In order to properly understand weight training, we should know something about the muscles.

An expression comes to mind that is most descriptive. I've often heard a thin person referred to as "a bag of bones." This is almost literally

true. The skin on the body is actually a container or bag, and a thin person with very little musculature does present a picture of bones sticking out all over.

The amazing fact is that this so-called "bag of bones" has the same number of cells in his muscles as the most muscular athlete!

Let's take a hypothetical case. Say that a well-developed athlete, a muscle man, has a million cells in his arm muscles. He has a big arm, maybe 18 inches. The thin boy also has a million cells in his arm, but his arm only measures 12 inches.

Why? The reason is cytoplasm. What is cytoplasm? It's a translucent, fluid-like substance that's found within every cell wall, the amount of which determines the size of every cell. It's the fuel of a cell.

The more work a cell is required to perform, the more cytoplasm is stored there by nature. A cell has its limit, however, as to size. So, instead of having one large cell filled with cytoplasm, nature distributes its fuel supply over a greater number of cells, thus spreading its potential power over a larger area.

Hence, a thin person has fewer cells filled with cytoplasm than the active athlete. The athlete who exercises consistently will have much more cytoplasm distributed over a greater number of cells; ergo, the 18-inch arm.

For proof of this, take the person who has had his arm in a sling for several weeks. Because of the absence of demand upon the muscles, that arm has reduced in size by inches. Yet there has been no loss in the number of cells in those muscles!

The shrinkage is due primarily to the reduction of the cytoplasm stored in those muscle cells. Nature doesn't put cellular fuel where it isn't needed. She is most efficient.

Knowing these facts, one can now see how progressive resistance exercises can develop larger muscles.

Some athletes might say they have no need for big muscles in their sport; in fact, big muscles might

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Trampoline® rebound tumbling equipment is only as good as its construction and Gym-Master has been proven all the way **BETTER BUILT**. Built better... with superior safety, finer performance, more exclusive features... to outlast all other makes.

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Varsity	6' x 12'	9' x 15' x 36"	9' x 1' x 5' 11"
Titon	8' x 16'	11' x 19' x 39"	11' x 1' x 6' 10"
Colossus	10' x 20'	13' x 24' x 40"	13' x 1' x 8'
Champion	4' x 8'	7' x 11' x 30"	7' x 1' x 4' 8"
Professional	5' x 10'	8' x 13' x 33"	8' x 1' x 5' 2"

height measurement on roller stands

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hinder rather than help. Remember this important fact: *The muscles are solely responsible for every movement of our body.* It's the only tissue in the body with this specialized function.

Movement is determined by the manner in which these muscles have been developed. The more powerful the muscles, the easier the work. In any sport, it's the contraction and relaxation of muscle groups that enable us to perform properly.

Notice that I don't say contraction alone, but also relaxation. One without the other would make us motionless. As one set of muscles contracts to move the arm, a group of muscles on the opposite side must relax. When we want to return this limb to its original position, the reverse takes place—the contracted muscle relaxes and the relaxed muscle contracts.

A technical term used to describe this is *reciprocal innervation*. (Special note: This, by the way, is the cause of a true pulled muscle—the failure of reciprocal innervation. In a future article, I'll explain this more fully.)

This is the basis for all movements. If we put together, in proper sequence, a series of muscle contractions and relaxations, all in their proper degrees, you'll have a perfect foul shot in basketball. If, on the other hand, one small group of muscles doesn't perform properly in relation to the others, then that foul shot is lost.

This is the result of training and practice over a long period of time, until our brain is no longer needed to control those groups of muscles. The act becomes second nature. This actually means a nerve center, lower down in our spinal cord, takes over the control of these muscles. It's sometimes referred to as being "lower motor neuronized."

Now do you see what could happen if one group of muscles are improperly or not fully developed? Isn't it easier to lift 10 lbs. than 100 lbs.? This is why a powerfully developed group of muscles will give an athlete a superior performance with less effort and fatigue. This makes the difference between a champion and a second placer.

Some athletes are called "naturals." Actually, this is the inherited ability of the individual to control his muscles through the various stages of contraction and relaxation for a smooth series of sequences.

Many natural athletes remain mediocre simply because they rely entirely upon this inherited ability. They fail to train hard and develop their muscles enough to be able to

rise to an emergency. When there's a demand for just a little more effort, the development of the muscles is the deciding factor.

Suppose you had a daytime job of lifting 50 lb. bags of potatoes and at night you trained with a 100 lb. barbell. Wouldn't those bags of potatoes feel light in comparison, and wouldn't you feel less tired than the man working alongside of you who doesn't train with a 100 lb. barbell?

Training with weights will give you that extra power or strength when it's needed, and it will also enable you to train harder and longer without getting tired as quickly. If you start out with a light weight in your exercises and gradually increase your poundage over a period of months, the body will slowly develop in order to handle this increased resistance.

After many months of lifting, the original weight will feel ridiculously light—but so will the present heavy ones in a year or so!

Now we have the athlete who says, "For my sport I need a special type of muscle." I've had news for this athlete. All muscles are exactly the same. The baseball player, the swimmer, the shot putter, the sprinter, the wrestler, and every and any athlete, all have exactly the same muscle tissues.

DIFFERENCE IN CONDITIONING

But there is a difference—and that difference is the manner in which the muscles have been conditioned. If you lift only heavy weights with the associated slow moves, then that's the way your muscles will react—like a hydraulic jack, slow but powerful. On the other hand, if you lift light weights with fast moves, then your muscles will work the same in your sport—speed with endurance.

Your method of training produces that special type of muscle, whether you work with weights or not. In any method of training, it's very important for the muscles involved to be properly exercised. They should be made to move from complete contraction to complete extension. We call this the normal physiological range of motion. If this is observed carefully, the muscles, so developed, can only be a tremendous benefit for any sport.

In developing the body, it should be treated as a unit rather than as individual sections. The average athlete shouldn't specialize for his particular sport at first, but rather

(Concluded on page 42)

AT TULANE



The floor in Tulane Gymnasium, where all varsity basketball games are played, is finished with safe, durable, non-slippery Seal-O-San.

"Seal-O-San and good basketball are teammates!" says *Cliff Wells*



Cliff Wells, Head Basketball Coach
Tulane University
New Orleans, Louisiana

"There is no substitute for fundamental training in basketball, and *there is no substitute for Seal-O-San* in surfacing your basketball floor," says Cliff Wells. "Seal-O-San and good basketball floors are teammates. Speed and sure footing, which are so necessary in basketball, are insured by Seal-O-San. That's why I specify Seal-O-San *must be used on*

the Tulane Gymnasium floor, where all varsity basketball games are played."

Coaches like Cliff Wells insist on Seal-O-San. He has learned, through years of experience, that he can depend upon Seal-O-San with assurance that it produces the finest possible basketball playing surface. Test Seal-O-San in your school this year.

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The seriousness of the problem is underlined when we reflect that these dietary shortages occur at a time when *nutritional demands are perhaps greater than at any other period in the body's development.*

Certainly during this adolescent "growth spurt"—a time of striking skeletal and muscular changes—an increase in metabolic rate is to be expected. It is not surprising that the Recommended Dietary Allowances for calcium, iron, riboflavin, ascorbic acid and vitamin D are higher for adolescents than for adults. Yet, it is just at this age period—from 13 to 16—that the adolescent child is "least amenable to nutrition education."⁴

By JAMES LeMAY

Transparencies for Projection—

Made in Two Minutes!

A NEVER-ENDING source of ready-made visuals that can be projected for faster and more perceptive communication to groups, may now be applied to your personal needs in a matter of minutes at a minimum of cost.

Every day you see hundreds of drawings, charts, and illustrations—valuable visualizations of ideas—in pamphlets, textbooks, journals, magazines, newspapers. To the communicator, these are splendid sources of communication aids. But such ready-made visuals are usually, in

themselves, too small for effective display before groups.

However, the new method of visual presentation—overhead projection—offers the opportunity to enlarge even the smallest visual to a size capable of communicating meaning to a large group of people.

Previous methods of converting material into transparencies consisted of hand copying or photography. Both methods involve special skills and long and complex processes; photography requires dark-rooms, trays, and solutions.

Recent developments in photography have produced a negative-to-positive photographic reflex process which requires no camera and dark-room, nor trays filled with chemical solutions. Called "Diffusion Transfer," the process produces transparencies in just two minutes from any original copy—bound books, cut sheets, even cardboard charts.

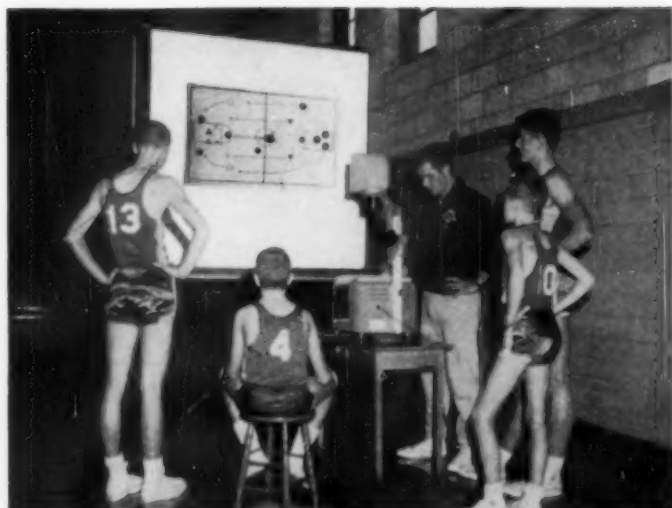
With Ozalid's materials and Projecto-Printer, anyone can easily produce beautiful transparent reproductions of any kind of original material, even if it is opaque, has writing on both sides, is bound in a book, or is mounted on a wall!

All the wealth of potential visuals continually around you can quickly and inexpensively be converted into overhead transparencies that result in more accurate and understandable communication.

STEP 1, EXPOSING:

Original copy is placed face-up on the white exposure stage of the Ozalid unit. A sheet of transfer on negative paper is removed from its light-tight package and placed on top of the original, with the emul-

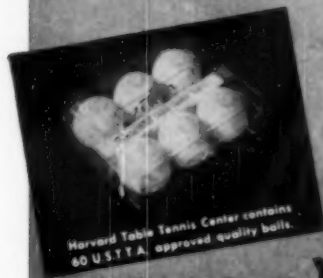
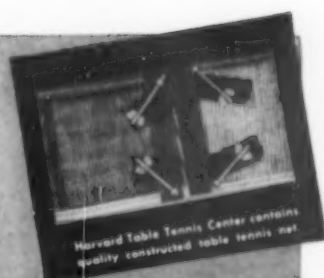
To make the transparency, the play is put on the machine and a sheet of Transferon negative paper is put on top of it. After a 20-sec. exposure, the negative is placed together with a sheet of transparent film and is fed simultaneously into the development section of the machine.



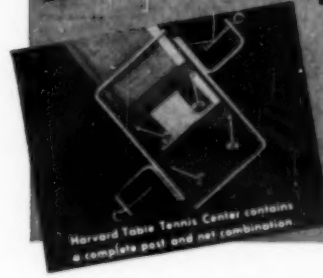
Photos by Ansco Division, General Aniline and Film Corp.

After making up the transparency of a play (taken from a book or magazine) the coach places it in the machine for overhead projection—then completely analyzes it for his players.





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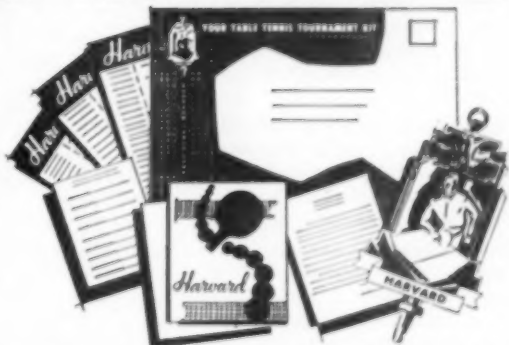


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sion (yellow) side down. The top of the Projecto-Printer is then closed over the material.

The negative paper can be handled in a normally lighted room, but care should be taken that the negative is not pre-exposed. When copying a bound book or large material, hold down the top and provide pressure with your hand during the exposure period. If the original to be copied is a single sheet, the top can be latched to provide tight contact.

To expose the negative paper, set and release the timer on the face of the machine. Average exposure time is 25 seconds.

STEP 2, DEVELOPING AND PRINTING:

The exposed negative is then removed from the printer. A sheet of positive, transparent film is then placed with its emulsion side in contact with the emulsion side of the negative paper. This positive film isn't sensitive to light.

The processor motor is then started, and the film is fed into the bottom slot simultaneously with the exposed negative in the top slot. Push the two sheets in slowly but steadily until the rollers take hold; then release.

In seconds, the processed negative and positive are returned to you in tight contact. Wait 20 seconds for the transfer to take place; then peel the two sheets apart.

STEP 3, CUSTOMIZING THE TRANSPARENCY:

Many times, simple sketches showing relationships, trends, or even key words can be helpful on the transparency. Grease pencils make lines and letters which are thick and bold; a film-marking pencil will make finely detailed lines; colored lines can be drawn with a felt-tip marking pen.

For carefully detailed ink work, a capillary action pen should be used. If special inks and pens aren't available, the plastic sheet can be treated by rubbing its surface with talcum powder to provide the "tooth" necessary to hold ink lines. Using a carbon paper to provide a dark image, you can type on the transparency.

To mount the transparency, use almost any opaque material such as cardboard, heavyweight paper, or even file folders. Just cut out a section of the middle to serve as the aperture and fasten the transparency into place.

STEP 4, USING THE TRANSPARENCY:

The name "Overhead Projection" comes from the fact that the projected image is behind and over the head of the speaker, or in front and

above the speaker when used for rear screen projection (as shown). The transparent visual is placed on a horizontal stage on top of a light source. The light passes vertically through the transparency and is reflected at an angle on the screen in back of the speaker.

The overhead projector can be used in a lighted room; it's located in front of a group, and the user may employ it extemporaneously while facing the audience.

Because of its simplicity, versatility and ease of preparing visual materials, it lends itself to the style of the user. For these reasons the instrument rarely fails to interest anyone engaged in group instruction or presentation.

Working with Weights

(Continued from page 36)

try to build up his body in general.

The time will come, however, when the seasoned athlete will need specialized exercises to develop that extra little power which makes the difference between first and second place. Until that time, stay with a sensible course of exercises and work toward your predetermined goal.

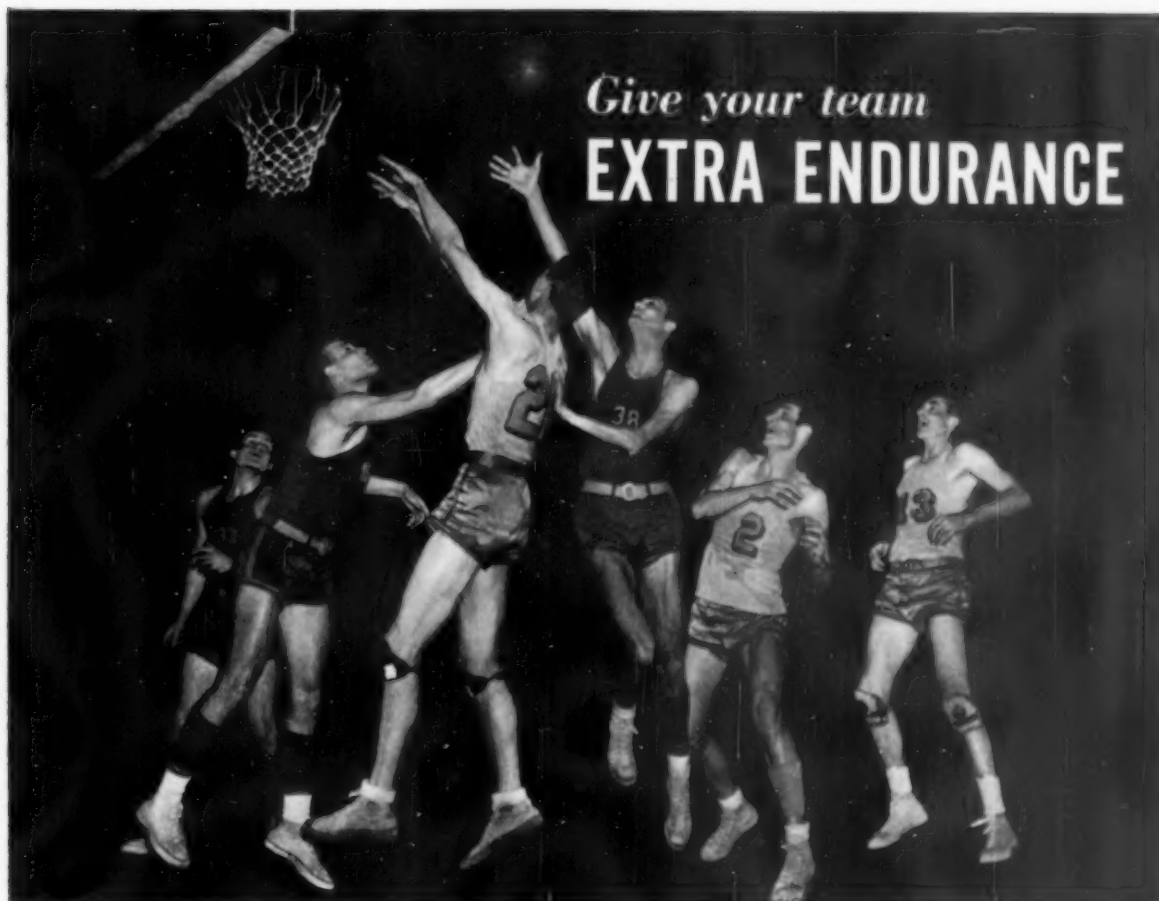
If an experienced instructor is available, follow his advice rather than that of your teammates or friends. You surely cannot compare years of experience in a specialized field with the experience of one individual in his own personal case.

An experienced instructor will bring you along safely and surely. Maybe not as fast as you'd like, but trust his experience over your blind, driving ambition, and you'll safely harvest the miraculous benefits of progressive weight resistance training.

In a future article, I'll offer exercises that I call "pre-game exercises." In most cases these can be performed in place of the usual warm-ups. Because of the nature of the moves, which work the muscles through their complete physiological range of motion, the incidence of injuries can be reduced.

These exercises will also help eliminate that "over warm-up" condition that reduces the efficiency of the athlete due to the high build up of lactic acid, the No. 1 cause of fatigue.

This is the third article Dr. Goldenberg has contributed to *Scholastic Coach* this year. Coming up are a two-part illustrated series on the actual use of weights, and articles offering unique approaches to the care of sprained ankles and pulled muscles.



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Build up an *extra edge of energy and endurance* in every athlete on your team through the powerful nutritional bonus available in Kretchmer Wheat Germ.

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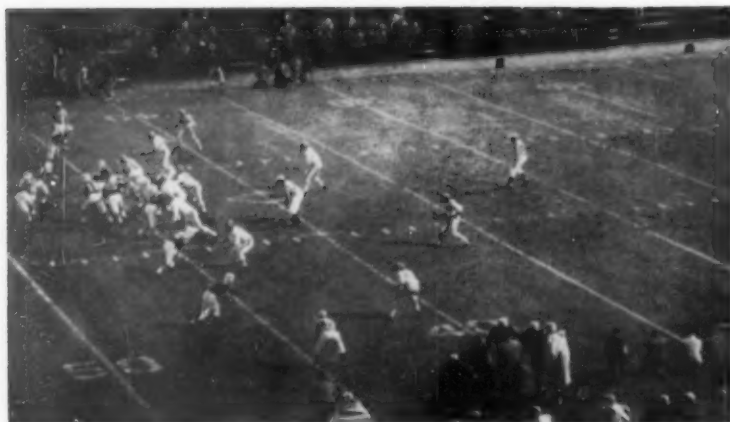
One Ounce of Kretchmer's Wheat Germ Supplies the Following Percentages of Recommended Daily Dietary Allowances

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Thiamine	38.0%	25.0%	30.0%	33.0%
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Niacin	9.5%	6.5%	7.5%	8.0%
Vitamin C	4.8%	3.6%	4.8%	4.8%
Vitamin B ₆	16.0%	16.0%	16.0%	18.0%
Protein	13.5%	9.5%	14.5%	14.5%
Iron	20.0%	16.0%	20.0%	20.0%
Phosphorus	19.0%	16.0%	28.0%	26.0%

Vitamin E. Wheat Germ is the richest NATURAL source of Vitamin E.

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NOTE: These percentage values are slightly higher for girls and women.



This 10-second print (its actual size is 4 x 5) reveals the initial defensive charge of the Oilers against a Patriots' running play. A slide of this shot (made in two minutes) was projected onto the dressing room wall at half-time by Patriots' coach, Mike Holovak.

Football Spotting with the **POLAROID**



The Patriots' spotting crew in action in the press box. The cameraman (center) prepares to shoot a play; a second spotter (left) peels apart a processed film packet to obtain a 10-second print of the preceding play; and a third spotter (right) phones the information revealed by the photos down to the coaches on the bench.

WHAT can be done to help the football coach on the bench gain a better understanding of the opponents' defensive set-up and maneuvering?

Until fairly recently, practically his only source of information was the spotter high in the stands. Furnishing an excellent panoramic view of the field, this elevated position enabled the spotter (as well as scouts, newspapermen, and cameramen) to analyze the events on the field and phone an analysis down to the bench.

The spotter is still playing his vital role from atop the stands. But a new device has been added to his equipment—the polaroid camera. Pioneered by the pros, and now being employed by an increasing number of colleges and high schools, the polaroid shots can be developed in seconds and rushed to the coach for immediate on-the-spot analysis!

For best results a dual camera set-up is employed. The cameras may be mounted on tripod bar and operated by one man. Or you may have two men manning individual cameras. When spotting an opponents' defense, the cameraman (or men) usually trigger the shutter release just before and just after the ball is snapped. The pictures thus show the last possible defensive set-up and the start of the defensive men's charges.

The coach can thus ascertain such essential information as: The exact spacing of the linemen (whether they're playing on the outside shoulder, inside shoulder, or head on), what they're doing—rushing or fading, looping, etc., what the linebackers are doing, how the secondary is reacting, etc.

From the offensive standpoint, the camera can discern the spacing in the line, the blocking patterns, the backfield movements, the pass patterns, etc.

This vital information in visual form eliminates guesswork and constitutes an invaluable aid in making adjustments and play-calling.

Once the photos are taken—and they're ready in just 10 seconds—they're rushed to the bench for study and evaluation. Seeing an old sweat sock floating down from the top of the Yankee Stadium has become a familiar sight to N. Y. Giants fans.

By HAROLD HAINFELD

Roosevelt School, Union City, N. J.



Why "black out" the receiver?

If your high school athletic field was built before 1950, chances are it is inadequately lighted.

And chances are there doesn't seem to be much you can do about it, because the conductors of your lighting system are loaded to capacity. Addition of new incandescent fixtures would mean new wiring, new transformers... possibly even new poles and new cross-arms — a major, expensive project.

Now, there is an economical solution

to this problem. With new High Output Wide-Lites, you can modernize your lighting system *without expensive rewiring*. You can *gain up to five times as much illumination*, yet actually reduce the total connected load, utilizing the same conductors.

To bring your lighting system up-to-date, you simply replace existing fixtures with more-efficient High Output Wide-Lites. And only the number of fixtures necessary to achieve the desired increase in illumination need be replaced. Wide-

Lite's unique broad pattern blends smoothly with those of adjacent units... provides smooth, even coverage without "hot spots" or heavy shadows.

For the first time, High Output Wide-Lites make possible the use of efficient color-corrected mercury vapor lamps for athletic field lighting. These modern lamps have more than seven times the life of incandescents, and produce a soft, glare-free light which more closely resembles actual daylight.

Get complete information on this effective low-cost method for modernizing your athletic field without expensive new construction. Fill in and mail the coupon today.

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Colored toe thread indicates sock size for easy pairing.

Size	Thread Color
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10	Green
11	Red
12	Blue
13	Orange

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for feet that compete!



But it's an important part of the Giants' coaching strategy.

The flying hosiery contains polaroid photographs of the action on the field, snapped by Giant spotter Wellington Mara, developed in 10 seconds, and tossed to the Giant coaches. In fact the Giants depend almost as much on Mara's tossing arm (and photographic eye) as on quarterback Charlie Conerly's arm.

A report from the Grand Rapids *Herald* several years ago reveals "a 'secret weapon' operated by the Michigan coaching staff on top of the press box, was the Wolverines '12th man' on Saturday."

Pictures taken with the camera and developed in 60 seconds revealed holes in Iowa's defense and helped Michigan score a historic victory.

Fourteen photographs of Iowa's defensive formations were snapped during the first period. Michigan coaches studied the pictures during the intermission, then put in several pass patterns that exploited the weaknesses revealed by the photographs.

Commenting on the use of polaroid pictures, coach Paul Dietzel explained their value to Louisiana State University. "In our 1959 opener with Rice, we couldn't get our offense rolling in the first half and trailed 3 to 0. We showed our players the polaroid shots taken just before and just after the snap, which revealed that Rice was lining up its tackles and ends slightly wider than usual, and starting them even wider on their initial charge. They were determined to stop our outside speed.

"So we changed a couple of interior blocking assignments and told our quarterbacks to hit them hard inside the tackles. We got 26 points in the second half."

"Against Miami," Dietzel added, "we were leading 7 to 3 at halftime, and we used the shots to confirm what our scouts had already told us—that Miami had a linebacker jumping around and shooting the gap at various spots. We showed the boys how to stop him, and scored three touchdowns in the second half."

A report in 1958 indicates the importance of polaroid photography to the Los Angeles Rams. The cameraman shot almost every play, taking up to 80 shots during the first half. An assistant coach stationed next to the camera, quickly scanned the pictures, noting the defense used and the positions of the players.

The aide communicated to the bench, informing the other coaches of the defensive movements. The photos were rushed to the bench and were available to the squad at halftime.

IN OCTOBER, 1952, Harold Hainfeld, a Union City, N. J., science teacher, climbed on the roof of Bayonne High School field to film his first football game. In nine years he has become one of the top scholastic football photographers in the New York metropolitan area. During the 1960 season, he and his crew of four cameramen filmed 62 games, including some of the leading schools in Westchester County and northern New Jersey, including such champions as Rye H. S., New Rochelle H. S., Harrison H. S., and St. Peter's H. S. Hainfeld has made a study of analytical athletic photography and holds a Professional Diploma (MA + 32 points, 6th year level) as a Specialist in Audio-Visual Education from Teachers College, Columbia. He has helped St. Peter's and Union Hill High, both of New Jersey, to set up the use of polaroid photography in football, has contributed articles to *Scholastic Coach*, and has appeared as a speaker on the subject at coaches clinics at Rutgers and Adelphi.

Similar reports on this use of 10-second photography have been received from the University of Miami, Air Force Academy, Minnesota, Stanford, and Amherst. All indicate that the pictures are valuable aids in their coaching set-ups.

Resourceful Warren Geise, coach of the South Carolina Gamecocks, has gone a step farther. He has the most helpful photographs converted into black-and-white slides, using Type 46L film. In two minutes he has a 3 1/4 x 4 inch slide that can be projected into a 6 x 8 foot picture.

"It takes 15 to 20 seconds to draw a chalk diagram," Coach Geise says, "and the slide saves all that time. We can thus cover more ground during the halftime break."

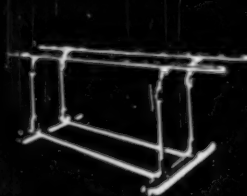
In the dressing room at half-time, Boston Patriots' head coach, Mike Holovak, points out how the opponents are defending against the Patriots' plays, using the wall as a screen.

Most of the pro teams use a Speed Graphic press type camera with a polaroid adapter in back. This makes a 4 by 5 inch photograph.

High school coaches may borrow the press camera used by their school newspaper or yearbook. This can be adapted by replacing the normal lens with a telephoto lens. Cost of an 8-inch lens is about \$14. The adapter

(Concluded on page 93)

The COMPLETE Source of Gymnastic and Field Equipment



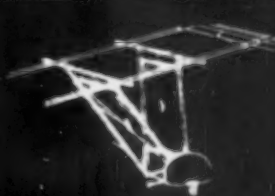
OFFICIAL APPARATUS

Everything needed. Meets A.A.U. and F.I.G. specifications.



UNIFORMS

Pants, trunks, tops, shoes. All sizes. Lettering.



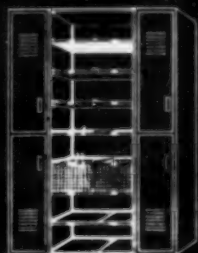
BASKETBALL STOPS

All types. Indoor and Outdoor. Portable and Stationary.



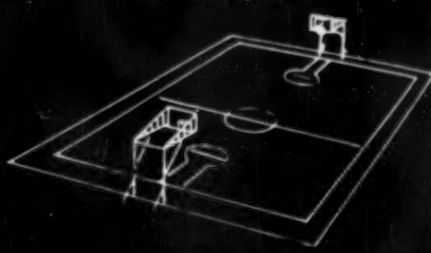
MATS

Every type and size. Cutouts. Complete accessories.



LOCKERS

Baskets, racks, locks, integrated units.



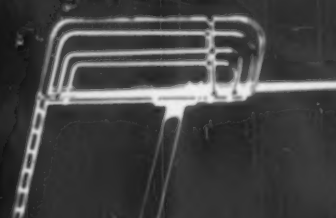
BASKETBALL FLOORS

Built to last a lifetime. Fastest to handle.



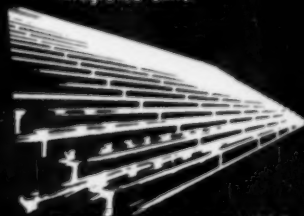
JUDO UNIFORMS

Finest imported quality. Men's and boy's sizes.



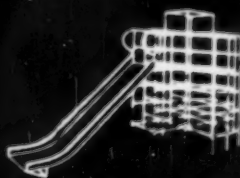
POOL EQUIPMENT

Diving towers, adjustable fulcrums, aluminum boards.



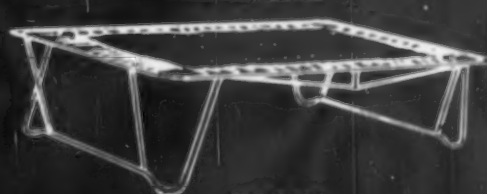
FOLDING BLEACHERS

More space for less money. Fully automatic if desired.



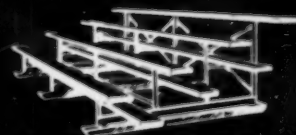
PLAYGROUND EQUIPMENT

Slides, climbers, merry-go-rounds, swings, ladders, bars, see-saws.



JUMPERS

Folding and non-folding. All sizes and styles. Pit jumpers.



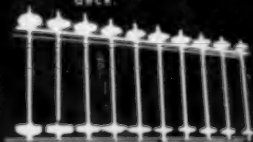
OUTDOOR BLEACHERS

Permanent or portable. Built to meet special conditions.



STADIUMS

Pre-cast concrete and steel deck.



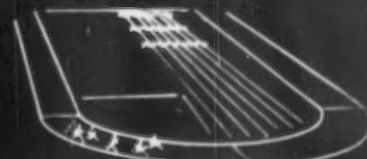
BODY BUILDING EQUIPMENT

Complete range of weight-lifting and conditioning apparatus.



AUTOMATED PARTITIONS

Quickly divides gymnasium for separate classes.



RUNNING TRACKS

Portable. Quickly installed. Easy to maintain.



ACCESSORIES

Peg boards, safety wall padding, books, chalk, grips.



SCOREBOARDS

Basketball and football. All styles. Every accessory.

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Please send me your free new 64-page buyer's guide and catalog of gymnasium and field equipment.

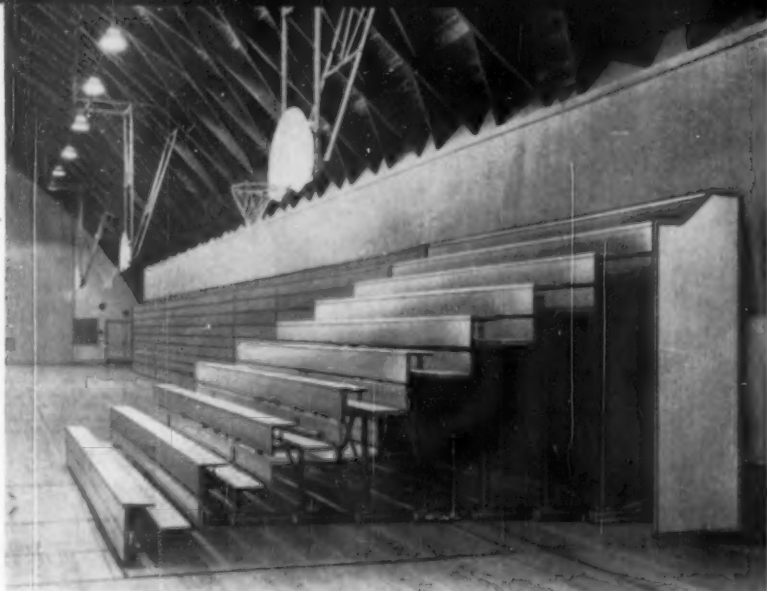
NAME _____

ADDRESS _____

CITY _____

STATE _____

250 WEST 6th STREET, SAN PEDRO, CALIFORNIA



Photos by Wayne Iron Works

Wall-attached, sectionalized rolling gymstands, manually operated.

Planning Gym Seating for Long-Range Needs

THE gymnasium is usually the most used, most abused room in the school plant. Because of its size and multiple uses, it's expensive not only to build but to equip and furnish.

One of the most important facilities of the modern gym is the seating accommodations. This can pose a vexing problem—if you don't exercise foresight in your planning.

For maximum efficiency and economy, you must plan logically in terms of the total capacity which will be needed not just today but ten years hence.

Your approach must consider two different factors. First is the spectator needs of your current and anticipated *student body*. Are student spectator sports involved? Will tournaments, meets and playoffs be

By C. H. WETZEL

Wayne, Pennsylvania

factors? Will these be at the inter-school, community, county or state level?

If your school has a major basketball program, your seating capacity will run higher than that for the student body alone. A common error in planning is to underestimate the seating needs for that extra capacity, that exciting "play-off."

The second factor is the community use of your gym for spectator seating. Will the gym serve double duty in the evenings and weekends as centers for community activities? How about community sports groups? Adult education programs? Civic affairs? Adult social events and public attendance at special school events? Anticipated current and future community demands on your gym should be fully surveyed.

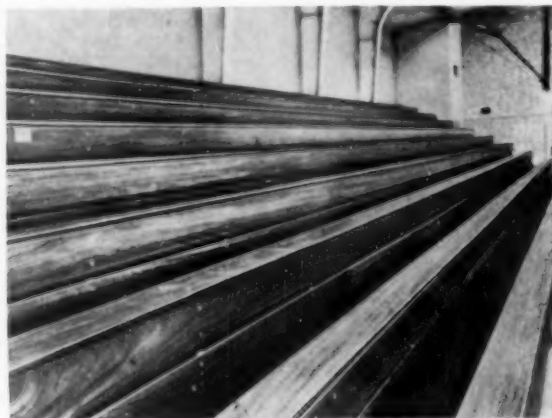
Once the all-important present and future "capacity" factors are determined, your best source of professional counsel is a responsible gymnasium seating manufacturer together with your architect. With their help and advice, proceed thus:

For an existing building or an already completely designed new building:

1. Give the selected manufacturer a plan of your gym, showing the dimensions of the areas available for seating, the size and location of the main basketball court, folding



Recessed wall-attached, sectionalized rolling gymstands, manually operated. When closed, units rest within a wall, recovering 100% of usable floor space. Balcony units are wall-attached, not recessed.

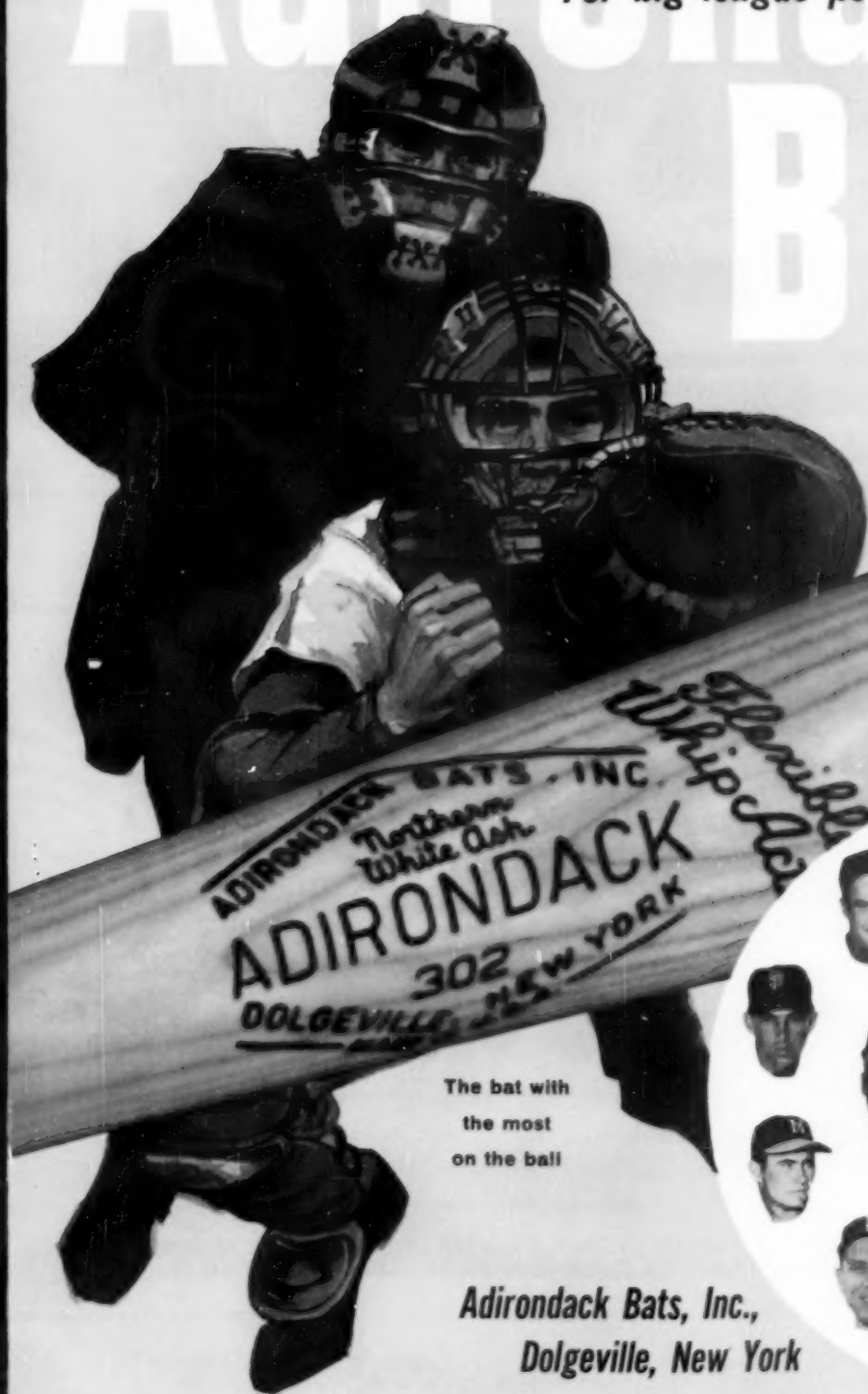


Continuous seating, one continuous sweep of unbroken seating. Unit is power-operated with the power system located beneath the stands. The operation of this type of stand is from a remote control.

Adirondack Bats

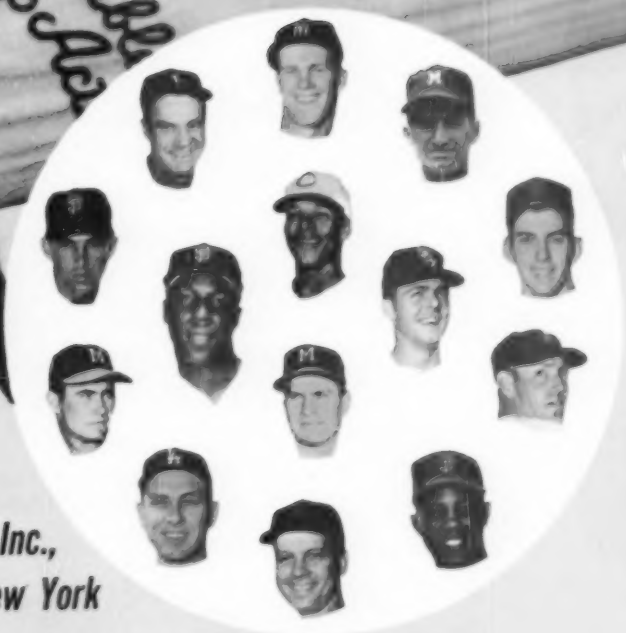
For big league power...

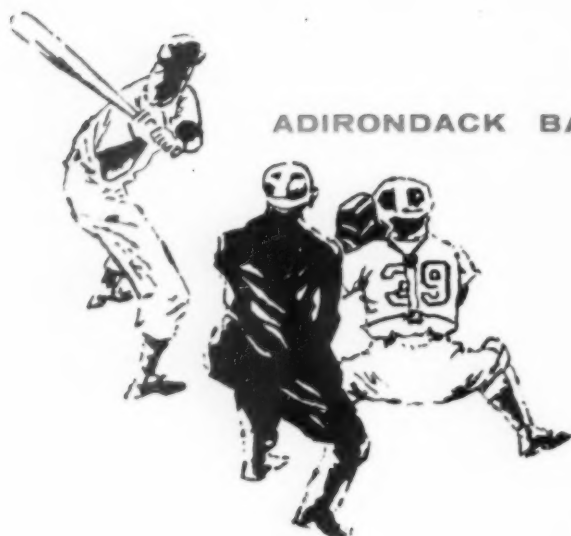
1961



The bat with
the most
on the ball

Adirondack Bats, Inc.,
Dolgeville, New York





ADIRONDACK BASEBALL BATS

SIGNATURE GROUP

Del Ennis, Vic Wertz, Bob Thomson, Hank Bauer, Gil Hodges, Larry Doby, Gran Hamner, Al Dark, Del Crandall, Ray "Ike" Boone, Rocky Bridges, Joe Adcock, Willie Mays, Hal Smith, Daryl Spencer, Tony Kubek, Albie Pearson, Jim Lemon, Jim Davenport, Willie McCovey, Vada Pinson, Norm Larker.

STANDARD TYPES

Standard bats available in popular player types . . . Ruth, Williams, DiMaggio, Kell, Stephens, Kiner, Musial, Mantle, Robinson, Kuenn, Mathews, Kaline, Aaron.

302SP

Finest selection SECOND GROWTH NORTHERN WHITE ASH, professional finish. Special turnings designed for high school, prep school and American Legion Players. Packaged one dozen to the carton. Assorted models 32"—34" in each dozen. Shipping weight—27 lbs. Note: Meets specifications for Pony and Babe Ruth League. Also available in solid length packaging.

302BL

Finest selection SECOND GROWTH NORTHERN WHITE ASH, ebony finish with gold stamping, weight controlled for perfect balance, patterned after models used by famous Major League hitters. Bats to the carton—1 dozen. Lengths 32"—36". Shipping weight—28 lbs.
Available in A, B, C and solid length packaging.

282

Select SECOND GROWTH NORTHERN WHITE ASH, natural finish. Manufactured in same models and types as 302. Bats to the carton—1 dozen. Lengths 32"—36". Shipping weight—28 lbs. Six different models guaranteed in each carton of one dozen in A B C packaging, four different models in solid packaging.

Pkg. A—Asst. Models—2/33", 5/34", 5/35". Pkg. B—Asst. Models—4/33", 4/34", 4/35". Pkg. C—Asst. Models—2/34", 6/35", 4/36"

212

Selected NORTHERN WHITE ASH, natural finish. Assorted models and lengths ranging from 32"—35". Bats to the carton—1 dozen. Shipping weight—28 lbs.
Also available in solid length packaging.

222

Quality NORTHERN WHITE ASH, antique finish. Assorted models and lengths ranging from 32"—35". Bats to the carton—1 dozen. Shipping weight—28 lbs.

4100

PRO LEAGUER. Selected Northern stock, tan finish. Assorted models and lengths ranging from 32"—35". Bats to the carton—1 dozen. Shipping weight—28 lbs.

1500

BOY'S MODEL. Finest selection Northern stock, tan finish. Assorted autographs. Bats to the carton—3 dozen. Length 29". Shipping weight—50 lbs.

112

FUNGO

Outfield Fungo, Finest selection NORTHERN WHITE ASH, natural finish. Bats to the carton—1 dozen. Lengths 36" and 37". Shipping weight—24 lbs. Also available in 3 each and 6 each cartons.

BATS

102

Infield Fungo, Finest selection NORTHERN WHITE ASH, natural finish. Bats to the carton—1 dozen. Lengths 33" and 34". Shipping weight—24 lbs. Also available in 3 each and 6 each cartons.

ALL STOCK OPEN AIR SEASONED

302

Finest selection SECOND GROWTH NORTHERN WHITE ASH, professional finish, weight controlled for perfect balance, patterned after models used by famous Major League hitters. Bats to the carton—1 dozen. Lengths 32"—36". Shipping weight—28 lbs. Manufactured in the models listed opposite: six different models guaranteed in each carton of one dozen in A B C packaging, four different models in solid packaging (see packaging note on back page).

Package A—Assorted Models—2/33", 5/34", 5/35"

Package B—Assorted Models—4/33", 4/34", 4/35"

Package C—Assorted Models—2/34", 6/35", 4/36"

Solid Lengths—32"—36"



302



302SP



302BL



282



212



222



4100



1500



112



102

**SPECIAL
BATS**

302S

Finest selection SECOND GROWTH NORTHERN WHITE ASH, professional finish. Manufactured in many of same models as 302 but turned to slightly smaller specifications for the particular use of the early high school age group. Bats to the carton—1 dozen assorted. Lengths 32"—34". Shipping weight—26 lbs. Also available in solid length packaging, including 30" and 31".

DESIGNED

**FOR
PONY**

282S

Select SECOND GROWTH NORTHERN WHITE ASH, clear finish. Manufactured in many of same models and types as 302 but turned to slightly smaller specifications to meet requirements of high school and prep school players. Bats to the carton—1 dozen assorted. Lengths 32"—34". Shipping weight—26 lbs. Also available in solid length packaging, including 30" and 31".

LEAGUE

**AND
BABE RUTH**

262S

Select SECOND GROWTH NORTHERN WHITE ASH, light tan finish. Manufactured in assorted models but turned to slightly smaller specifications to meet requirements of high school and prep school players. Bats to the carton—1 dozen assorted. Lengths 32"—34". Shipping weight—26 lbs. Also available in solid length packaging, including 30" and 31".

LEAGUE

PLAY

252S

High quality SECOND GROWTH NORTHERN WHITE ASH, white handle, brown barrel. Manufactured in assorted models but turned to slightly smaller specifications to meet requirements of high school and prep school players. Bats to the carton—1 dozen assorted. Lengths 32"—34". Shipping weight—26 lbs. Also available in solid length packaging, including 30" and 31".

**APPROVED
LITTLE**

302J

Finest selection SECOND GROWTH NORTHERN WHITE ASH, professional finish, assorted autographs, meets specifications for Little League play. Bats to the carton—1 dozen assorted. Lengths 29"—32". Shipping weight—24 lbs. Also available in solid length packaging including 27"—28"—33".

**LEAGUE
BATS**

302JB

Finest selection second growth northern white ash, open air seasoned, ebony finish, taped handle, assorted autographs, meets specifications for little league play. Bats to the carton—one dozen assorted. Lengths 29"—32". Shipping weight—24 lbs. Also available in solid length packaging, including 27" 28" 33".

282J

Select SECOND GROWTH NORTHERN WHITE ASH, natural finish, assorted autographs, meets specifications for Little League play. Bats to the carton—1 dozen assorted. Lengths 29"—32". Shipping weight—24 lbs. Also available in solid length packaging including 27"—28"—33".

282JC

Select SECOND GROWTH NORTHERN WHITE ASH, two tone red and white finish, assorted autographs, meets specifications for Little League play. Bats to the carton—1 dozen assorted. Lengths 29"—32". Shipping weight—24 lbs. Also available in solid length packaging including 27"—28"—33".

272J

LITTLE LEAGUE BAT. White finish selected Northern Stock. Safety grip handle. Meets specifications for Little League play. Bats to the carton—1 dozen assorted autographs. Lengths 29"—32". Shipping weight—23 lbs. Also available in solid lengths packaging including 27"—28"—33".

252J

Select SECOND GROWTH NORTHERN WHITE ASH, white handle, brown barrel, assorted autographs, meets specifications for Little League play. Bats to the carton—1 dozen assorted. Lengths 29"—32". Shipping weight—24 lbs. Also available in solid length packaging including 27"—28"—33".



212J

LITTLE LEAGUE BAT. Light finish. Selected Northern Stock. Meets specifications for Little League play. Bats to the carton—1 dozen assorted autographs. Lengths 29"—32". Shipping weight—23 lbs. Also available in solid lengths packaging including 27"—28"—29".

300J

Select NORTHERN STOCK. Meets specifications for Little League play. White handle, black barrel. Packaged 1 dozen to carton. Lengths 29"—32". Shipping weight—24 lbs.

242J

Select NORTHERN STOCK, tan finish, assorted autographs, meets specifications for Little League play. Bats to the carton—1 dozen assorted. Lengths 29"—32". Shipping weight—24 lbs.

4100J

NORTHERN STOCK. Meets specifications for Little League play. Black finish. Length—29"—32". Shipping weight—24 lbs.

ALL STOCK OPEN AIR SEASONED



302S



282S



262S



252S



302J



302JB



282J



282JC



272J



252J



212J



300J



242J



4100J

291 OFFICIAL SOFTBALL BAT. Finest selection SECOND GROWTH NORTHERN WHITE ASH, ebony finish. Thin grip model. Friction grip. Bats to the carton—1 dozen. Lengths 33"—34". Shipping weight—24 lbs. Diameter $2\frac{1}{8}$ ".

291H OFFICIAL SOFTBALL BAT. Finest selection Hickory, antique finish. Thin grip model. Bats to the carton—1 dozen. Lengths 33"—34". Shipping weight—24 lbs.

281 OFFICIAL SOFTBALL BAT. Finest selection SECOND GROWTH NORTHERN WHITE ASH, antique finish. A professional softball bat with extra long hitting surface and large handle. Friction grip. Diameter $2\frac{1}{8}$ ". Bats to the carton—1 dozen. Lengths 33"—34". Shipping weight—25 lbs.
Also available in 6 each cartons.

271 OFFICIAL SOFTBALL BAT. Finest selection SECOND GROWTH NORTHERN WHITE ASH, ebony finish. Diameter $2\frac{1}{8}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.

271B OFFICIAL SOFTBALL BAT—Bottle type, black ebony finish. Finest selection SECOND GROWTH NORTHERN WHITE ASH. Diameter $2\frac{1}{8}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.

ADIRONDACK SOFTBALL

261 OFFICIAL SOFTBALL BAT. Large size softball bat with $2\frac{1}{4}$ " barrel conforming with softball bat specification rule change legalizing its use during 1961 play. Selected Northern White Ash. Clear finish. Friction grip. Bats to the carton—1 dozen. Lengths $3\frac{3}{32}$ "— $5\frac{3}{32}$ "— $4\frac{3}{4}$ ". Shipping weight—26 lbs. NOTE: Not official for slow pitch play.

BATS

263 OFFICIAL SOFTBALL BAT. New large size softball bat with $2\frac{1}{4}$ " barrel. Official for 1961 play. Selected Northern White Ash. Natural finish. Friction grip. Bats to the carton—1 dozen. Lengths $3\frac{3}{32}$ "— $5\frac{3}{32}$ "— $4\frac{3}{4}$ ". Shipping weight—26 lbs. NOTE: Not official for slow pitch play.

265 OFFICIAL SOFTBALL BAT. New large size softball bat with $2\frac{1}{4}$ " barrel. Official for 1961 play. Selected Northern Stock. Light tan finish. Friction grip. Bats to the carton—1 dozen. Lengths $3\frac{3}{32}$ "— $5\frac{3}{32}$ "— $4\frac{3}{4}$ ". Shipping weight—26 lbs. NOTE: Not official for slow pitch play.

251 OFFICIAL SOFTBALL BAT. Finest selection SECOND GROWTH NORTHERN WHITE ASH, natural finish. Diameter $2\frac{1}{8}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.
251B OFFICIAL SOFTBALL BAT. 251 softball bat in bottle models.

G 251 OFFICIAL SOFTBALL BAT. 251 softball bat in green.

R 251 OFFICIAL SOFTBALL BAT. 251 softball bat in red.

201 Official softball bat selected northern stock, open air seasoned, ebony finish. A heavier than average softball bat, ideal for slow pitch play, friction grip. Bats to the carton—one dozen assorted lengths 33"—34". Shipping weight—26 lbs.
201TG 201 softball bat in thin grip model.

241 OFFICIAL SOFTBALL BAT. Finest selection SECOND GROWTH NORTHERN WHITE ASH, clear finish. Diameter $2\frac{1}{8}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.
241B OFFICIAL SOFTBALL BAT. 241 softball bat in bottle models.

231 OFFICIAL SOFTBALL BAT. Quality selection SECOND GROWTH NORTHERN WHITE ASH, light tan finish. Flock grip. Bats to the carton—1 dozen. Lengths 33"—34". Shipping weight—24 lbs.

181 OFFICIAL SOFTBALL BAT, quality SECOND GROWTH NORTHERN WHITE ASH, white finish. Diameter $2\frac{1}{4}$ " to $2\frac{1}{2}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.
181B OFFICIAL SOFTBALL BAT. 181 softball bat in bottle models.

ALL STOCK OPEN AIR SEASONED



291



291H



281



271



271B



261



263



265



251



Q 251



R 251



201



241



231



181

ALL STOCK OPEN AIR SEASONED



171

OFFICIAL SOFTBALL BAT, selected Northern stock, antique finish. Diameter $2\frac{1}{4}$ " to $2\frac{1}{2}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.



171G

OFFICIAL SOFTBALL BAT, selected Northern stock. Antique finish. Designed for girl softball players. Blue tape grip, 2" to $2\frac{1}{4}$ " diameter. Bats to the carton—1 dozen. Lengths 33", 34". Shipping weight—23 lbs. Also available in 31", 32" solid length packaging.



161

ADIRONDACK SOFTBALL BATS

OFFICIAL SOFTBALL BAT, selected Northern stock, ash and hardwoods, saddle tan finish. Diameter $2\frac{1}{4}$ " to $2\frac{1}{2}$ ". Friction grip. Bats to the carton—1 dozen assorted. Lengths 33"—34". Shipping weight—24 lbs.



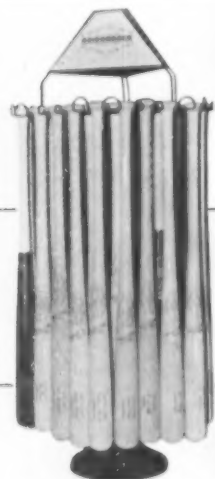
G161

OFFICIAL SOFTBALL BAT. 161 softball bat in green.



R161

OFFICIAL SOFTBALL BAT. 161 softball bat in red.



This ADIRONDACK Bat Rack
Ideal For Displaying Bats



218E

OFFICIAL SOFTBALL BAT, selected SECOND GROWTH NORTHERN WHITE ASH, tan finish. A bat specifically designed for use by schools and recreation departments in indoor and outdoor games. Diameter 2". Friction grip. Bats to the carton—1 dozen. Lengths 29"—31". Shipping weight—22 lbs. Also available in solid length packaging 27"—28"—32".



788E

OFFICIAL SOFTBALL BAT. Brown finish. Selected Northern Stock. Ideal for playground use. Tape grip. Bats to the carton—1 dozen. Diameter 2". Lengths 29"—31". Shipping weight—22 lbs. Also available in solid length packaging 27"—28"—32".



141

OFFICIAL SOFTBALL BAT, Northern stock, black finish with white stamping. Diameter 2" to $2\frac{1}{4}$ ". Friction grip. Bats to the carton—3 dozen assorted. Lengths 33"—34". Shipping weight—70 lbs.

partition, doorways, pilasters, heating and ventilating ducts, pipes or radiators, and the size and location of any other obstruction affecting a seating installation.

2. Show the material and construction of walls and floor. If windows are involved in the seating area, give their size, location, and height of sills.

3. If balconies are involved, show the dimension of the balcony areas, the height of the balcony floor above the main floor, the height of ceiling or roof trusses above the balcony, and the size and location of entrances to the balcony. Also, decide whether the balcony seating is to be stacked at the rear or the front of the balcony.

4. If seating with automatic power operation is desired, indicate the location of electric power outlets and the voltage available.

5. Tell the manufacturer the seating capacity presently desired, particularly if it's less than the building can ultimately accommodate. Tell him if funds are limited, so that the initial installation recommended may be economically increased later to the ultimate capacity.

At the planning stage of a new building:

This is the ideal time to consider all the factors involved in good gym seating. Obviously your seating needs can well affect the overall dimensions and even the construction materials of your building, certainly many of the design elements involved.

Because gym seating has become so highly specialized, it's particularly important for your selected manufacturer to survey your requirements with you and your architect early in the planning stage. This should result in substantial seating economies and help to avoid costly building errors.

1. Tell your selected manufacturer the desired ultimate seating capacity of the building, even though such capacity isn't currently needed or if available funds are limited. This will permit a gym design that will most economically provide for future seating needs.

2. The manufacturer will help you compute the length of stands and the number of rows which will provide the ultimate seating capacity. This is a determining factor in the size of your building, and will logically lead to a decision whether to locate all the seating on the main floor or install part of it on one or more balconies.

In general, if the maximum number of rows isn't more than 12, a one-level installation is most eco-



Reverse roll forward movement model, where balcony seating and main floor seating join to form one continuous bank of seating. Balcony seating folds forward when closed to form a private balcony facility.

nomical. If the number of rows is 20 or more, two-level seating is preferable. If it's between 12 and 20, both arrangements should be studied for comparison.

3. For a one-level installation, provide flat, obstruction-free walls for the full length and height of each stand desired. For economy, these lengths should preferably be multiples of 16 or 18 feet. Locate doorways, ducts, drinking fountains, switch boxes, fire extinguishers, winches for basketball backstops, and other equipment near the corners of the room—those locations being least desirable for seating. Where possible, avoid pilasters behind stand locations.

Design the walls for proper gymstand attachment, and the floors for ample strength and for ease of gymstand operation. Where recessed stands are desired, provide recesses of the proper depth and height. If power operation is desired, locate electric outlets and switches accordingly.

4. If a two-level installation is selected, follow the foregoing procedures in their entirety for the main floor and, insofar as they apply, for the balconies. In addition, determine the height of the balcony floor above the main floor to conform to the height of the main floor stands.

The manufacturer will then make a "sight-line study" to determine the minimum rise per row which will provide adequate visibility from the balcony down to the main floor. This will determine the height of the balcony stands and, consequently, the height of the ceiling or

roof trusses for headroom above the top row.

The next decision is whether the balcony stands, when closed, should stack at the front or the rear of the balcony. Once this is determined, the location of the balcony stairs can be decided. They should be positioned in such a manner that their access to the balconies won't be blocked by the stands, whether open or stacked.

5. Having completed the foregoing with the advice and counsel of the seating manufacturer and the approval of your architect, then decide whether the seating capacity immediately wanted, or the funds available, make it desirable to purchase only a portion of the ultimate seating capacity. You may then let your architect prepare your plans and bidding instructions.

Remember, the estimated life of a new school is over 40 years. The more thoughtfully and comprehensively your gymnasium and its seating is planned, the more efficiently and economically it will serve your school and community today and tomorrow.

Planning your present and future requirements needn't be complicated, time-consuming or expensive. But it must be thorough.

The alternatives are inadequate capacity, "blind spots," interference with building elements, insufficient spectator comfort and safety, etc.

Survey your situation thoroughly, draw up a checklist, call in a real professional expert, bring in your architect . . . and you'll be in business!

Pretty tough to win
if you can't
control the boards!



New and scientifically designed, "Jump Ball" is a one-way ticket to better rebounding, better win-loss records. It develops a player's ability to jump high and grab those rebounds *hard* (takes a good grip to pull "Jump Ball" down). Coaches report players can increase their effective jumping from 2" to 3" during single season, with regular workouts. "Jump Ball" has adjustable height, rugged construction for years of hard use, and can be swung to sharpen coordination and timing on jumps.

All this, and yet "Jump Ball" is well within the budget of any school. Only \$89, with complete hardware, from Haldeman-Homme—a name nationally respected in the school field.

IT RESPONDS IT SWINGS IT ADJUSTS



MODEL 100A \$89⁰⁰ F.O.B. ST. PAUL, MINN.
MODEL 200A \$116⁰⁰ F.O.B. ST. PAUL, MINN.

Buy now, for a
brighter season ahead!

**HH HALDEMAN
HOMME**
Manufacturing Company
2580 University Ave., St. Paul 14, Minn.

By **HOWARD F. COVAL**
Physical Education Chairman
Woodside (N. Y.) Junior H. S.

BOWL in the GYM?

TOO many physical educators tend to slavishly follow the traditional lines of instruction. Yet with thoughtful planning, health education can be lifted out of the stereotyped.

Bowling provides an excellent means of achieving a wider range of absorbing and meaningful activities. In fact, it's becoming so popular on both the adult and adolescent level that we're professionally bound to teach its fundamentals. Happily, it's not difficult to teach, and with a little ingenuity it can be adapted for instruction in any gym.

MOTIVATION

The mere mention that some of the students have already bowled and that many others will be attempting to do so in the future, is enough to start the program off on the right foot.

Recent local or national tournaments afford another good means of interesting the class. A word or two about the techniques employed by the top professionals on TV cannot hurt either, especially with regard to specific individual characteristics. In teaching, however, the correct fundamentals must be strictly adhered to.

BASIC STANCE

Certain checkpoints in the stance are necessary for a successful approach and delivery. Although there are probably as many stances as there are bowlers, the main thing they all have in common is comfort. When teaching, this must be stressed.

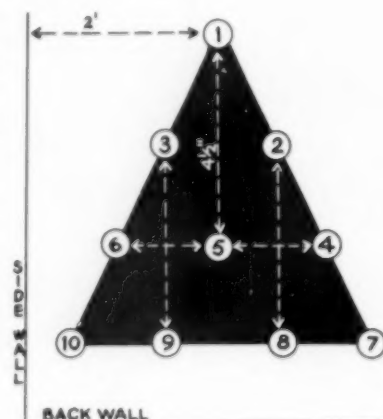
A comfortable stance usually finds the bowler in a fairly upright position with one foot ahead or both feet parallel, the toes pointing directly toward or into the pins, and the shoulders square or parallel to the foul line. The ball should be held in front of the body either at waist or chest level, supported by both hands.

Constant reminders of these points will insure a good start.

There are three generally accepted approaches to the foul line: the 3, 4, or 5 step approach. For practical purposes, the 4-step approach should be taught. All three, however, should be mentioned and demonstrated.

In describing the 3-step approach, the following are important: First, the bowler must have fairly strong hands and excellent coordination; and, second, the steps must be of equal length and the arm-swing very fast.

The 5-step approach, on the other hand, includes four very short steps and a long last one, and a much slower arm swing. It's used by tall bowlers to cut down their speed to the line.



Makeshift pin setup in the gym

In contrast, the 4-step approach has a long first step, then two short ones and a long last step. The arm swing is of medium rhythm, and it's employed by the greatest number of participants.

In teaching this 4-step approach to the class, first give an overall demonstration, then break it down into its parts. As the first step with the right foot is taken, emphasize the push of the ball away from the body in a down and out arc. When demonstrating, hold this position so that the students can visually memorize it.

The second step brings all the



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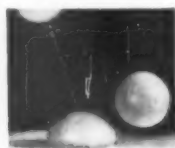
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weight down on the left foot with a straight bowling arm slightly to the rear of the right hip. The arm now is at the middle point in the backswing.

The third step shows the right foot forward and the right arm comfortably back. This position appears awkward, yet implies oncoming power.

The last step finds the left foot forward pointing directly toward or into the pins, followed by a pendulum arm swing and an easy natural release of the ball.

To facilitate the arm swing and foot movements, there must be a slide on the last step. Otherwise, the bowler won't be able to coordinate properly. Emphasize continually that all right-handed bowlers must finish on the left foot, bowling hand about chest or face level, "shaking hands" with the pins.

After demonstration and explanation, have the boys perform in a mimetic exercise as follows:

On count 1: step forward with the right foot, extend the right arm just above the right knee.

On count 2: step forward with the left foot, right hand to rear of right hip.

On count 3: step forward with the right foot, right hand comfortably back.

On count 4: step forward with the left foot, slide, pendulum arm swing and release ball.

Have boys assume the comfortable correct stance position, as described, before beginning the mimetic exercise, and make sure all return to their spots before repeating the exercise.

Don't neglect left-handed students. Explain that they are to follow the instructions in reverse.

Caution the boys not to take large steps which will interfere with the boys in front of them. Obtain self-control in the practice arm swing and release of the ball. Continue this mimetic at least eight times so that the majority of boys can learn effectively.

As the class shows success, merely count out the numbers and have the boys perform proper movements. Follow up with application of the skill learned.

APPLICATION DRILL

1. Arrange squads opposite one another with as much distance between them as the gym will permit. Under no circumstances should the distance be more than 60 feet. Give a softball to each pair of squads. Pace or measure off 15 feet for ap-

proach distance. Have the first boy in Squad A take the proper approach and roll the ball to the first boy in Squad B, then go to the end of his squad.

The first boy in Squad B takes his approach and rolls the ball to the second boy in Squad A. Then he too goes to the end of his squad. This continues in a rotation pattern. The more advanced boys or captains can assist in the teaching.

AIDING THE UNCOORDINATED

During this application drill, you'll find some students still having difficulty coordinating the approach with the arm swing. Walk each of these students through the steps; then, standing to the bowler's right, hold the bowling wrist and guide the arms as the approach is paced off.

In this way the student will follow the teacher's steps and learn the correct execution and coordination.

2. Follow up the above lesson by having all the squads face in the same direction, similar to a relay formation set-up. Place a pin in front of each squad at the far end of the gym, and have all squads bowl for the one pin spare. Use masking tape or chalk to set up foul lines 15 feet in front of the squads. Unprepared or excused boys can assist by returning the softball and setting up the pin. As a safety measure, insist that the excused boy roll the ball back to the boy performing.

For added interest, permit those who topple the pin to bowl a second time. This will tend to make the students concentrate harder. Have contests in each squad to see which boy hits the pin most often.

3. As the group indicates its readiness to progress, schedule squads to bowl against a 10 pin set-up. Arrange alleys close to a corner of the gym. Permit each bowler two rolls. If a strike is made, two more deliveries should be given and all the pins totalled. If a spare is made allow one extra delivery. Follow same scoring as mentioned above. Then have the boy go to end of line.

If space doesn't permit all squads to practice at one time, conduct blackboard discussions with the inactive squads about techniques and proper methods of scoring. Include, too, the difference between the hook, curve, straight, and backup balls. Discuss the way to convert spares and splits and the correct bowling etiquette. Next, rotate the squads so that all get an opportunity at each station.

(Continued on page 77)



Best way to build a winning squad...a film record of every game!

In the fast-moving game of basketball, it's difficult enough to remember all the mistakes your players make — let alone try and explain to them later what they did wrong. That's why a film record is such a valuable coaching tool. When you capture team performance with film, you can show each member individually—as often as necessary—how to strengthen weak points and correct mistakes.

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are easy to study...provide permanent records of performance. In addition, processing can be handled quickly and easily; usually, you'll have movies for screening within 24 hours after a game!

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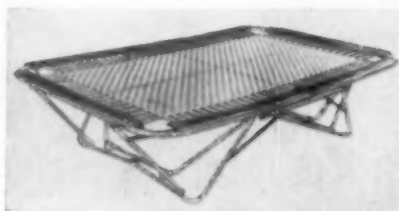
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• **INSTANT COLD FIRST AID.** Minnesota Mining & Mfg.'s Kwik-Kold is small plastic chemical package providing an instant cold pack for injuries when squeezed.



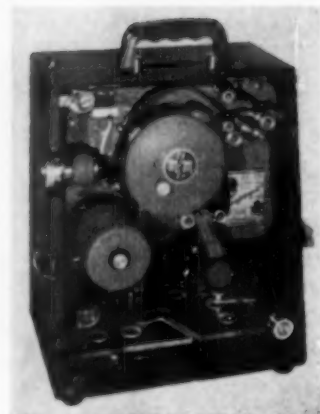
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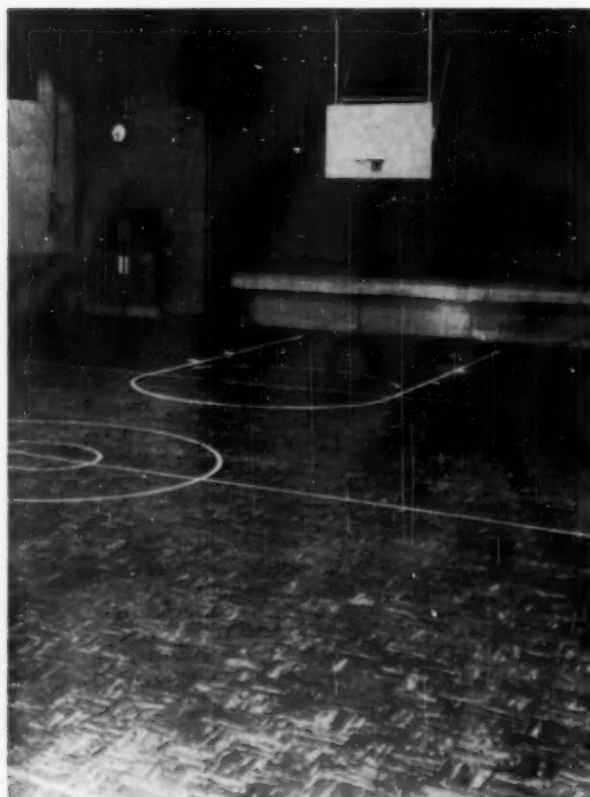


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100-Yd. Dash	9.3	Fresno, Calif.	5/15/48	440-Yd. Run	46.2	Salt Lake City	6/21/47	2-M. Relay	7:22.7	L. A. Relays	5/24/57
100-Yd. Dash	9.3	Evanston, Ill.	5/14/55	440-Yd. Run	46.0	Berkeley, Calif.	6/ 5/48	800-Relay	1:22.7	Texas Relays	4/ 4/57
100-Yd. Dash	9.3	Fresno, Calif.	5/12/56	440-Yd. Run	45.8	Modesto, Calif.	5/26/56	440-Relay	39.9	Kansas Relays	4/20/57
100-Yd. Dash	9.3	Durham, N. C.	5/ 5/56	120-Yd. H. H.	13.5	Fresno, Calif.	5/15/50	440-Relay	39.9	W. C. Relays	5/11/57
100-Yd. Dash	9.3	Texas Relays	4/ 6/57	220-Yd. L. H.	21.9	Baton Rouge, La.	4/ 2/60	100-Meter Dash	19.0	Can. Oly. Trials	7/15/60
100-Yd. Dash	9.4	Arlene, Tex.	4/27/57	220-Yd. L. H.	22.2	Durham, N. C.	5/ 5/56	100-Meter Dash	19.1	Mt. of Chi	6/10/60
220-Yd. Dash	20.0	Ranger, Calif.	6/ 9/56	220-Yd. L. H.	22.3	Salt Lake City	6/21/47	100-Meter Dash	19.3	U.S.A.-U.S.S.R.	7/19/58
220-Yd. Dash	20.1	Santa Clara, Calif.	4/ 2/60	400-Meter H.	40.5	Los Angeles	6/20/50	200-Meter Dash	20.7	U.S.A.-U.S.S.R.	7/20/58
220-Yd. Dash	20.2	Los Angeles	5/ 7/49	110-Meter H.	13.4	Bakersfield, Calif.	6/22/56	200-M. Dash (Turn)	20.5	Santa Clara, Calif.	3/19/60
				880-Yd. Run	1:46.8	L. A. Relays	5/24/57	400-Meter H.	56.5	U.S.A.-U.S.S.R.	7/20/58

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Motivational Devices for the Baseball Coach

MOTIVATION plays a leading role in successful baseball coaching. From the start of the indoor workouts until the final game, interest must be sustained and tired wills spurred to action. The soundly motivated squad becomes an enthusiastic, compact unit with an eagerness and morale that makes it highly coachable.

The motivating devices should aim at (1) stimulating enthusiasm and the desire to learn, (2) setting standards of accomplishments consistent with the abilities of the players, and (3) offering activities that afford pleasure and produce satisfaction.

The positive approach is essential. Following are some practical devices that have produced excellent results on both the college and high school level.

1. **Personality of the Coach.** The personality of the coach is one of the most important factors in motivation. He should be an educator and a practical psychologist as well—one who sees the relationship between baseball and the total educational process. He must know the game intimately and have the ability to impart this knowledge efficiently and well. He must have an enthusiasm for the sport which is radiated to the squad as a spur to better performance. He must be dedicated to the ideals of baseball, to his school, and to his team.

Many factors make up the coach's personality. Some of them are: emotional stability and mental health, personal appearance, health and vitality, alertness and cheerfulness, dynamic leadership, the ability to command respect, ability to plan and organize, the inspiration to steel the will of the squad to strenuous effort and endurance.

2. **Record Board.** A record board in the baseball squad room serves as an excellent motivator. This board should be colorful and attractive, and should feature both past and current records. These may be set up on library size cards made up of the school colors. Slats should

be made on the board so that the cards may be changed whenever necessary.

The conference or league records should also be displayed, including pitching, batting and fielding, and stolen base records.

3. **Campus Bulletin Board.** A campus bulletin board which the student body may study and observe is always a good means of motivation. This board should be attractive and kept up to date. On it should be posted the schedule of games, games that week, results of games played, and newspaper arti-

cles about games, players, coaches, and alumni who've gone on into professional baseball.

The baseball bulletin board should be kept throughout the school year. Team members will receive a great deal of pride from seeing their names or pictures on it, while the entire student body will be interested in what's going on in baseball and what the athletes are achieving. In the fall of the year, the statistics of the previous season should be posted.

A bulletin board should also be set up in the squad room, featuring



**"He went down . . . but he
DIDN'T GET HURT!"**

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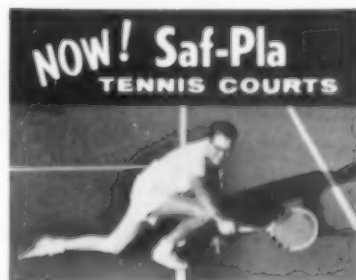
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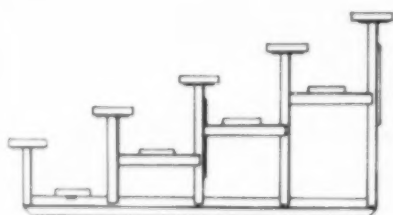
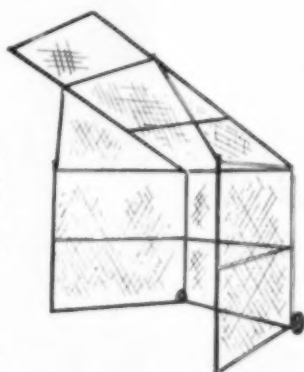
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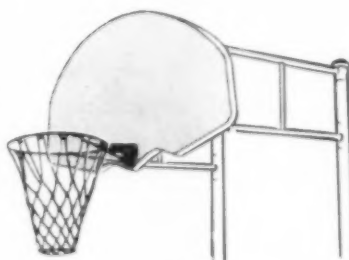
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magazine articles on baseball, photographs of professional players, and photos of team players who execute certain skills well. Captions under the pictures may point out what the player is doing correctly.

4. **Rewards** in the form of trips are a great incentive to the players. If you have a traveling squad, it should be changed frequently so that every boy knows he has a chance to make the trips. In college baseball, the NCAA district play-offs and the college world series are the ultimate in rewards. On the high school level, your state finals are the goal of the players.

5. **Graphs and Charts** showing the team's progress constitute excellent motivators. A team manager with some artistic ability will do a good job for you. These may be displayed on your squad bulletin board. The graphs should be kept weekly or bi-weekly, and may cover all phases of the game. They're always received with enthusiasm and stimulate players to do better.

6. **Report Card.** Attached to this article is a form developed by Sam Piacentino, a former freshman coach at Manhattan College. This form, distributed weekly by the coach, enables the player to make an intelligent appraisal of himself and direct him toward self-improvement. The coach goes over each report with the player. Personal guidance is given and a relationship is built up between coach and player. Many of the players who would remain just average performers can, with such an approach, be converted into outstanding players. These reports take time and care, but motivate players to better performance.

7. **Moving Pictures** are an especially good form of motivation early in the season during your indoor workouts. We try to balance them in between conditioning drills. Easily obtainable from commercial food companies and professional organizations, they enable you to show the squad superb execution of the skills.

If you're fortunate enough to have someone on the team or a Dad who's interested in photography, you may take movies of your games and personnel. These may be shown before practice or on rainy days. Movies taken early in the season should be shown as soon as possible. Delay may ruin the entire effect.

8. **Competition** during regular practice sessions is one of the best means of motivating your squad. Organize your practice so that no time is lost and all players receive

individual attention. The following methods are suggested:

(a) Time trials on the bases. Keep a record of these trials and see if the individual betters himself. Post the times on the squad bulletin board in order to stimulate better performance.

(b) Time each individual running to first base.

(c) Clock each player going into second base.

(d) Relay races on circling the bases.

(e) Relay race for 60 yards (distance from home to second base). Balance your teams to assure good competition.

(f) Hitter stays up to bat in batting practice as long as he hits safely.

(g) Hitter goes up to bat with a definite count on him such as two-and-one or three-and-two.

(h) Practice games in which you don't change sides until nine men are out. Clearing the bases at the end of three outs and keeping the same battery in there for the three innings, saves time and speeds up the game.

(i) If you have a small squad, you may put three men or four men up to bat and the rest of the squad in regular positions. When the batter makes out, he changes places with the left fielder. Everyone else rotates one position. The rotation goes from left to center to right fields; from third to short to second to first. You may keep your pitcher and catcher in there all the time, changing them as you see fit. If a player catches a fly ball, he changes position with the batter. This is a departure from regular practice and the boys really enjoy it. There are many other ways of motivating your squad during the practice session if you think about it.

9. Public recognition by the press, radio and television. The human ego loves to be satisfied and there's no better way than to have the players see their name in print, hear it over the radio, or be seen on television. Maintain good relations with the writers and sportscasters and they'll be kind to you. We in baseball have something they can use. Make sure your squad gets the maximum coverage.

Your school newspaper should be a valuable medium in relaying information throughout the school year. Attempt to feed the paper baseball news for each edition. Such material as records and news about players who played in summer leagues is good copy during the fall. Later on you may include tidbits on prospects for the coming

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*American Pub. Health Assoc., Oct. 15, 1954



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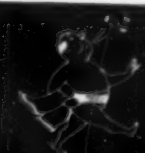
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season. Try to sell the sports editor the idea of running baseball news throughout the school year. A good manager can keep the paper supplied with this information.

For college baseball people, the national publications such as the collegiate baseball newspaper is published from January through June. Team subscriptions may be purchased for this publication. During the winter months, the players will look for the articles on their team as well as their opponents. The college baseball guide is another avenue which will help motivate the players during the off-season, enabling the players to compare their marks with those of other leagues and conferences.

10. **Awards.** Your standards for awards should be of the highest order. Letters should be considered the highest of honors, and the boys should have to work hard to win them. The standards should be brought to their attention before the season starts so that they'll know exactly what's required to earn a letter.

Trophies should be awarded to the player with the highest scholastic index for four years, the best pitching record, fielding record, bat-

ting record. A most valuable player should be selected either by the team or a committee. Trophies should be displayed in prominent places on the campus or in town. These trophies may be donated by clubs, school organizations, and storekeepers.

11. **Fall Baseball Leagues and Practice.** If you coach in an area where football doesn't take up the fall season, baseball leagues may be run. College teams in the New York area played as many as 10 games last year, and there's a movement on foot to break up one conference schedule into two parts, half of the schedule in the fall and the other half in the spring.

Even if you don't play any organized games, you may conduct fall tryouts and practice. The weather in many sections is ideal for this. This presents a good opportunity to see what you have coming up next spring.

12. **Diamond Club.** The membership in this organization is open to letter winners in baseball, both undergraduates and graduates. You'll find young men working hard to earn their varsity letter so as to be eligible for this club. Social prestige is given to the membership,

and alumni can keep in touch with the school through this organization. The club may donate a trophy for your team. The alumni who've gone on into professional baseball may come back and help some of the boys.

A monthly or quarterly newspaper may be worked up by the members and sent to the membership. This publication could include news about the present and past players. The club can organize clinics and put on demonstrations for Little Leagues and other interested groups.

13. **Facilities and Equipment.** We all love to work with the best possible facilities and equipment. Your existing facilities should be given regular maintenance and care. The grass should be cut frequently, the pitching mound kept in good condition, the infield and outfield put into excellent shape. Boys take pride in their diamond. It will reflect in their play. Often team members will maintain the field.

Schools should strive to have good looking, well-made, and form-fitting uniforms. Players tend to perform well when they look well. The uniform gives the young men the feeling of looking like a ball player. A

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team that's equipped properly is motivated properly.

These motivating devices aren't all-inclusive. I'm sure there are many more. If we use them well during the school year, we'll help our game progress and stimulate our players toward greater accomplishments.

"Sports, properly conducted, develop character, make man courageous, a generous loser and a gracious victor. Sports refine the senses, give us intellectual penetration. Sports, rightly understood, mean the development of the whole man." Thus spoke Pope Pius XII on the eve of the Olympic Games.

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- Fast Ball
- Curve Ball
- Change of Pace
- Control
- Moves to Bases
- Fielding
- Covering Bases

CATCHING

- Fielding Pitches
- Fielding Fly Balls
- Shifting
- Throwing
- Strategy
- Covering Bases

INFIELD PLAY

- Fielding Grounders
- Fielding Fly Balls
- Shifting
- Throwing
- Cut-Offs
- Covering Bases
- Alertness

OUTFIELD PLAY

- Fielding Fly Balls
- Fielding Grounders
- Covering Ground
- Throwing
- Backing up Bases
- Alertness

BATTING

- Stance
- Stride
- Level Swing
- Hips
- Shoulders
- Head
- Bunting
- Signals

RUNNING

- Footwork
- Speed
- Sliding
- Stealing
- Signals

TEAM PLAY

- Sportsmanship
- Aggressiveness
- Alertness
- Cooperation



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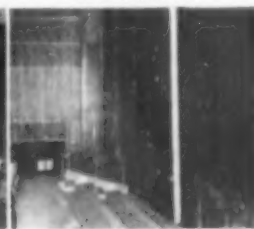
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Ordering Your

THE administrative responsibilities for selecting and purchasing athletic equipment must be clearly defined and delegated. Because athletics involve the health and safety of the participant, the selection and purchase of athletic equipment must meet rigid standards of quality and safety to protect the participant.

It's essential, therefore, that a close relationship exists in all matters of athletic equipment between the coach and athletic director, athletic director and school administrator, or his superior whoever he may be.

RECOMMENDATIONS

Here's a list of recommendations to guide you in establishing good equipment administration practices:

1. Adequate equipment should be provided every participant in athletics. The equipment should be of proven high quality and afford maximum safety to the participant.

2. Selection of athletic equipment should be a major responsibility of the coach. The head coach of each sport should either purchase new equipment or be consulted before purchases are made.

3. Care and maintenance of equipment should be the responsibility of the head coach of each sport. In schools with full-time equipment managers, a major portion of the responsibilities will be delegated to the equipment manager.

4. All sports participants should be instructed in the use and care of equipment.

5. The school administration has an obligation to see that plenty of equipment is provided for a complete athletic program. No sport should be slighted simply because it does not produce revenue.

6. Equipment purchasing, budgeting, and maintenance policies should be established cooperatively by the coaching staff, athletic director, business manager, and school administrator. An Athletic Council can be established to achieve this purpose.

7. Quality of equipment should never be sacrificed for price.

8. Uniform procedures should be established in all problems concerning athletic equipment.

9. Adequate space should be provided for a partitioned stock room

Equipment

where bins and cabinets can be utilized for storing and handling cleaned and soiled equipment. Some schools use the stock room for storage of out-of-season equipment.

10. The scope of the athletic and physical education programs should be the basic blueprint for the athletic budget. The budget should reflect the school's entire program. The budget should be prepared by coaches, athletic director, school business manager, and school administrator. It should include all anticipated expenditures and receipts—and should be itemized by sport.

11. New equipment needs should be determined and budgeted at least one year in advance.

HOW TO ORDER

The ordering and purchasing of athletic equipment should be thoroughly systematized. The easiest way to save time and avoid problems is to use purchase forms, copies of which give a record of exactly what was ordered, its description, and date of order.

This is only one part of the ordering procedure. Whether you are the athletic director of a large school or the head coach of all sports in a small school, the same general buying procedure should be followed:

1. Some person must determine what is to be purchased. Usually this will be the coach of the individual sport concerned. He will make recommendations based upon a report of an inventory of equipment on hand.

2. The determining of what is to be purchased must be passed on to the one who is to place the order. An additional step may be necessary if approval at some higher level is necessary. Or it may be eliminated if the coach places the order personally, if he has that authority. The latter procedure is recommended unless the item is definitely known by number and brand.

3. The order is then placed with the dealer, and the coach should receive a duplicate copy of his purchase order. If a copy is not given to the coach, he should receive some type of notice to keep in his files. This insures the coach that the equipment has actually been ordered.

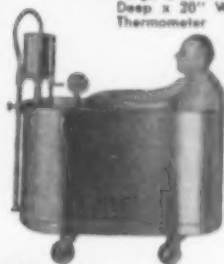
4. The invoice is received either prior to, with, or after the shipment of goods. The invoice should be examined, approved, and sent to the paying official. The actual disposition

(Continued on page 91)

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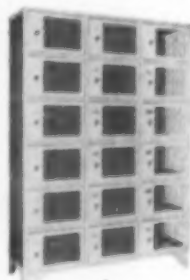
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Westinghouse Photo

A recommended lighting layout for football. Full details on pole and light installations may be gathered from the chart at the bottom of this page and the tabulation at the top of the adjacent page.

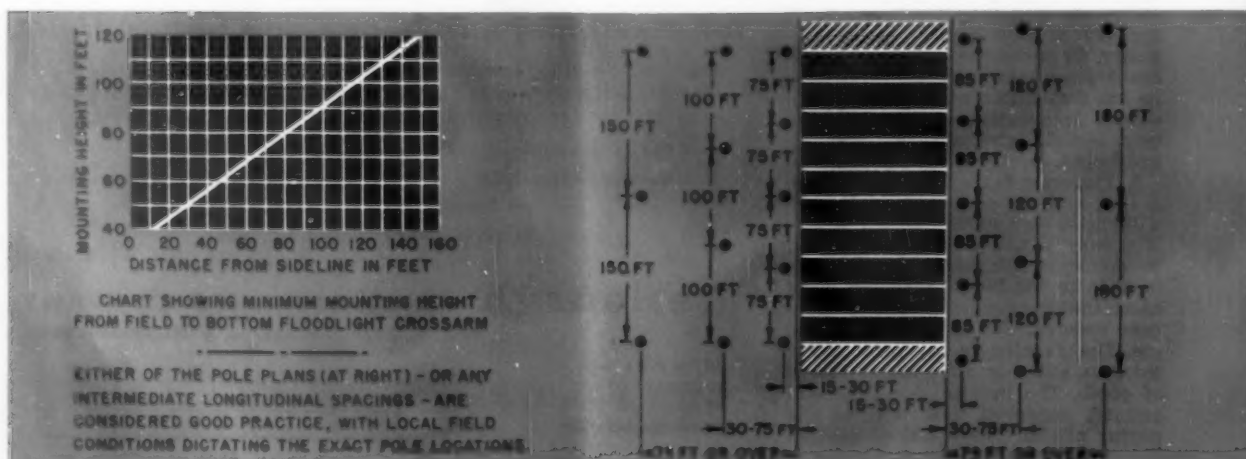
THE LIGHT FANTASTIC

By C. L. CROUCH and J. E. KAUFMAN
Illuminating Engineering Society (New York City)

"COULD you see that play?" A few years ago this was a real question in night sports. Maybe you saw the ball and maybe you didn't.

A woman was sitting in the bleachers of the Buffalo ball park. A line-drive hit her between the eyes. She said she never saw it. Investigation disclosed that glare had reduced her visibility by over 50%.

The lighting came from huge "bathtubs" of powerful bulbs mounted on top of the stands on low poles. Looking toward home plate from the bleachers, one gazed



into a bank of lights. It wasn't long after this incident that the park installed a new floodlighting system with good beam control mounted on high poles.

Lighting can be a hazard or a revelation. It can blind or it can reveal tricky plays or objects hurtling through the air with the speed of an express train. In order for it to fulfill the one and not the other, certain visual principles in the design must be observed.

Contrast. A sports object is seen in contrast with its background at the particular instant. It may be viewed against the greensward, against the stands, people in the stands, or against the sky. Fortunately most objects are light in color and are seen against dark grass, dark clothing, and dark sky. But it can be lost from view if it has the same brightness as the background; there would be no contrast. This should be checked in any design.

Highlights and Shadows. The recognition of a sports object is also influenced by the highlights and shadows in the object itself. These determine whether the object is three-dimensional and possesses form and contour, thus helping the player to handle it skillfully and accurately.

The highlights and shadows are due to different casts of lights coming from various directions. In a soundly illuminated plant, the light will come from all sides and overhead. This is essential because the players are looking in all directions and the object must appear sharp to them.

If its surface is in shadow, it will appear only in silhouette—and silhouette doesn't offer the maximum cues for instantaneous location in space.

Avoidance of Glare. Where overly bright light sources intrude on the field of view, they can reduce vision to an uncomfortable and distracting, if not downright hazardous, degree.

When the light from these bright sources is projected through the eye to the sensitive surface in the rear, a scatter effect takes place on the way through (just like the effect of opposing car headlights in a fog). This causes a light veil to overlay the image of the object and "washes out" its contrast.

There are formulas for calculating these losses of visibility, and an instrument has been developed that will make the measurement directly. As soon as it becomes available, it should be a great aid in checking the performance of any lighting system.

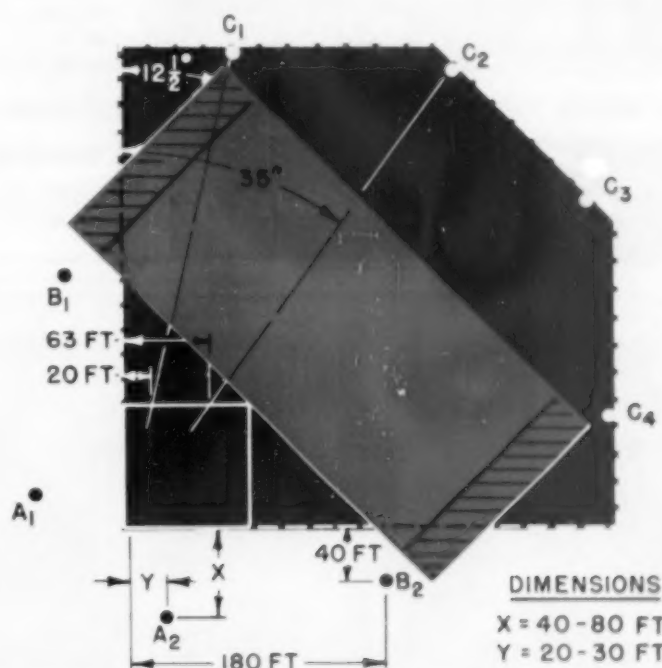
In general, glare can be greatly reduced by mounting the lights very high out of the normal field of view. This also implies accurate control of light in the equipment in order to best cover the zone in which the object travels.

These principles have been taken into consideration by the Sports and Recreational Area Lighting Committee of the Illuminating Engineering

TABULATION FOR FOOTBALL LIGHTING LAYOUT

Class of Play	Distance Sideline to Poles	Number Poles	FLOODLIGHTS		
			Type	Class	No. per Pole
I	Over 140'	6	1 or 2	GP	90
	100-140	6	2 or 3	GP	80
II	75-100	6	3	GP	36
	50-75	8	3	GP	24
III	30-50	8	4	GP	21
IV	15-30	10	5	GP	8
			6	OI	12
			6	O	18
V	15-30	10	5	GP	4
			6	OI	6
			6	O	8

Lamps: 1500-watt clear general service, operated at 10% over rated voltage.



Recommended layout for a combination baseball and football field.

TABULATION FOR COMBINATION BASEBALL-FOOTBALL FIELD (BASEBALL PRIMARY SPORT)

Sport	Current Recommended Practice—Footcandles Maintained in Service	Type 3, 4, or 5 Class GP			Type 6 Class OI			Minimum Mtg. Ht. to Bottom Floodlight
		Number per Pole			Number per Pole			
		A	B	C	A	B	C	
Baseball	20—Infield 15—Outfield							
Football	15	16	32	16	22	44	22	90'

Lamps: 1500-watt clear general service, operated at 10% over rated voltage.

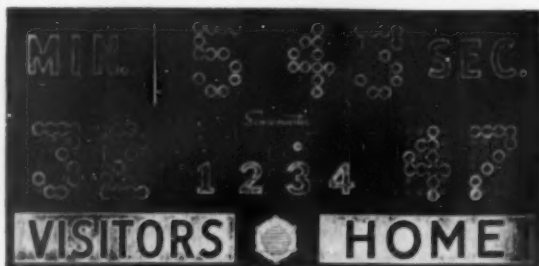
Mounting height on a pole should be the greatest height recommended for any sport served by that particular pole.

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Society and incorporated in the third edition of the *IES Lighting Handbook*. An amplified version will appear in the February issue of *Illuminating Engineering*. Some extracts from the Handbook follow.

Sports Lighting Objectives. Good lighting enables the player to see the object of play regardless of its size or speed and location during play, and also enables officials and spectators to follow the course of the play.

Since most outdoor sports have the object of play in both aerial and ground locations, lighting should be provided from ground level to the height that the object may rise. For example, in football, there should be light from field level to about 50 feet above ground.

Basic Lighting Recommendations. To provide comfortable and accurate seeing conditions, the illumination on the football field should be at least as follows (distance from the nearest sideline to the farthest row of spectators, footcandles on playing surface):

Class I	.....over 100'	100
Class II	.....50 to 100'	50
Class III	.....30 to 50'	30
Class IV	.....under 30'	20
Class V	.....no fixed seating facilities	10

It's generally conceded that the distance between the spectators and the play is the first consideration in determining the class and lighting requirements. However, the potential seating capacity of the stands should also be considered, and the following ratio is suggested: Class I for over 30,000 spectators; Class II for 10,000 to 30,000; Class III for 5,000 to 10,000; and Class IV for under 5,000.

The footcandle values represent the average illumination recommended on the horizontal playing surface at ground level. When these values are met, the vertical component of illumination will usually be adequate for conditions where the object of play is in the air.

Illumination at all points in which the object of play travels should be fairly uniform. The maximum illumination value on the field should be no more than three times the minimum value. In other words, there should be *diffuse* illumination (even coverage) almost like that found on the playing field during an overcast day.

In addition to having the proper amount of light and good diffusion or even coverage, it's important to avoid glare. The lighting for the players should not intrude upon the field of view of officials or spectators. Conversely, the lighting for the spectators should not produce glare for players and officials. The layouts described later take this factor into consideration.

EQUIPMENT AND TECHNIQUES

Modern floodlighting equipment can economically produce a controlled pattern of light from a considerable

distance, and withstand deterioration in outdoor use. The floods can concentrate light on and near the playing area from as much as several hundreds of feet away.

Following are five different classifications of floodlights defined according to their ability to concentrate the light. The classification is called "Luminaire Type." The ability to concentrate the light is designated as "Beam Spread."

Type	Beam Spread in Degrees
1	10 to less than 18
2	18 to less than 29
3	29 to less than 46
4	46 to less than 70
5	70 to less than 100
6	100 and over

A Luminaire Type 1 produces light in a 10 to 18° cone of light and therefore is more concentrating than a Type 4, for instance, which projects its light in a wider cone, 46 to 70°. In general the choice of Type or Beam Spread depends on the area to be covered and the distance from floodlight to area. The greater the distance, the narrower the beam spread for economical coverage of the same size area.

CONSTRUCTION FEATURES

Outdoor floodlights are also designated according to their construction features and are classed as follows:

Enclosed heavy duty (HD), Weatherproof. Consists of a housing with a separate and removable reflector and a hinged door with a cover glass.

Enclosed ground area and general purpose (GP), Weatherproof. Consists of a housing which forms the reflector. Enclosed with a cover glass.

Ground-area open (O), Weatherproof. Consists of a housing which forms the reflecting surface. No cover glass.

Ground-area open with reflector insert (OI), Weatherproof. Consists of a housing which forms part of the reflecting surface and a separate reflector. No cover glass.

The choice between the different classes depends chiefly on differences in cost and on maintenance. Open floodlights are less expensive but collect dirt more rapidly and therefore depreciate in light output at a faster rate.

The number of floodlights, their mounting locations about the playing field or stadium, and their mounting height should be selected to give the desired amount of diffuse illumination on all playing locations, with a minimum of glare in most player and spectator positions. All points in which the object of play travels should be lighted fairly uniformly, since a fast moving object passing from a light to a dark space will appear to accelerate.

To reduce or eliminate any objectionable glare, floodlights, wherever possible, should be located out of the

(Concluded on page 93)

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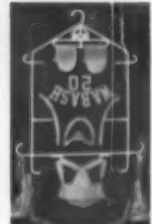


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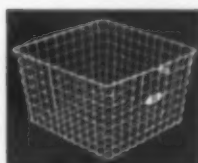
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Plant With 4 Gyms and a Pool

(Continued from page 9)

—swimming pool, exhibition gymnasium, and lockers and showers—is from a corridor along the north side of the physical education building or from six direct entrances to these spaces on the south side.

Students entering the building from the entrance drive can proceed immediately, by walking down a few stairs, to the boys' or girls' swimming lockers and showers flanking the pool. Here are lockers, showers, and drying facilities complete with electric hair dryers in the girls' locker rooms. The latter is separated from the deck by an aluminum railing.

The swimming pool, used by some 250 swimmers each day, measures 42 feet in width by 75 feet 1 inch in length. Its depth of 3 feet 6 inches at the shallow end increases to exactly 12 feet at the deepest end, which is equipped with two one-meter high aluminum diving boards.

The atmosphere of the swimming pool is keyed to relaxation, and provides for the comfort and safety of beginners and advanced swimmers alike. The ceramic tile tank of light blue has six lanes, running the length of the pool, prominently separated by white markers with a black inset. Crossing there are the dark blue markers of the practice lanes.

Enhancing the appearance of the pool, as well as aiding the swimmers, are 24 500-watt square lighting units, installed at intervals underwater. These units are properly placed to avoid shining into swimmers' eyes. These end and side lights can be switched on and off independently, thus offering a variety of underwater lighting effects for aquatic displays.

Extending from the brown ceramic curb is the deck varying from yellow to tan tiles, measuring 8 feet 5 inches on three sides and 15 feet at the deep end of the pool. Adding a cheerful decorative touch to the area is the patterned structural glazed tile wall separating the seating from the pool.

Picking up the colors of the tank and the deck are the blue, yellow, and tan tile inserts against a white background. Completing the balcony treatment is a brown ceramic tile curb with glass inserts and an aluminum railing. Other wall treatment consists of yellow structural glazed

tile and concrete block.

Fixed stadium-type balcony seating can accommodate 500 to 600 spectators for a water ballet, swim meet, diving exhibition, or other aquatic event.

The moisture-resistant ceiling, pitching gently to each side and lowered over the balconies, is white enameled corrugated, perforated aluminum. The lowered ceiling treatment is interesting, yet functional, serving as a space for ventilating ducts. Recessed in the ceiling are weatherproof, stainless steel luminaires, each containing three fluorescent lamps, shielded with opaque glass lens.

A pressure sand system filters the pool's water, which has a temperature of 78° plus.

For purposes of age separation and control, individual locker areas serve the swimming pool and the gymnasium. With this arrangement, the boys' lockers for each recreational unit are located at opposite ends of the building, while the girls' lockers are back-to-back beneath the pool seating and the girls' balcony physical education station.

The gymnasium covers an area 240 feet in length by 102 feet in depth. Within this space is an exhi-

EQUIPMENT SUPPLIERS

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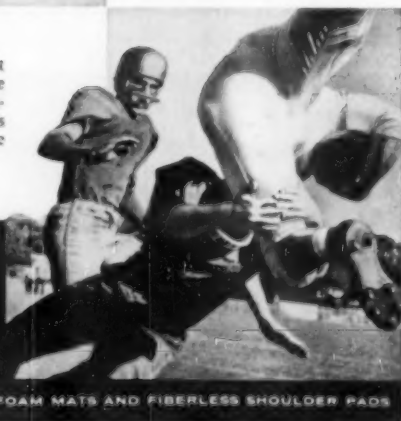
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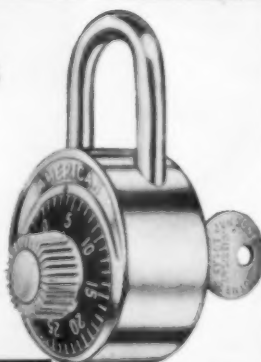
American LOCKS for MODERN SCHOOLS

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Model 300K (Key controlled), Model 300 (without Key control) also available.

bition gym, divided by electrically operated folding partitions, forming individual facilities for boys and girls.

Two other areas, overlooking the main gym, are the balcony locations—one each for boys and girls. Light blue-grey canvas duck curtains partition the balcony teaching spaces from the main gym when desirable.

The same soft, refreshing colors of the swimming pool are carried through to the gymnasium. Structural glazed tile on the lower portion of the walls in the exhibition gym is sunlight yellow; in the boys' balcony gym, it is blue; and in the girls' balcony unit, it is a mottled green. Completing the wall treatment throughout these spaces are yellow concrete blocks.

Integrated into the design of the gym are 28 five foot by seven foot plastic sky domes mounted 45 feet above the main area and 30 feet above the upper floors. This natural top lighting, eliminating glare, is complemented by 124 symmetrically arranged luminaires.

Proviso's resilient maple flooring throughout the gym is bright, and safe against floor-burns and shin-splints.

The versatility and flexibility of this gym is found in its folding properties—partitions, curtains, bleachers, baskets, and backstops. Seating accommodations for 4000 spectators when not in use are telescoped beneath the two balcony gyms.

Retractable and folding baskets and backstops are mounted throughout the main gym for refereed games or free-throw practice. When the equipment is "folded away," there's ample space for teaching and playing games other than basketball.

Supporting the centrally located folding partition is one of three plate girders. Near this girder are the sound system's multiple speakers, useful for class instruction and amplification for an athletic event or a school assembly.

Completing Proviso's physical education set-up are the facilities on the lower level below the gymnasium. Classrooms, team lockers and showers, equipment storage and issuance, and the orthopedic gym are arranged along three perimeter areas. A central grouping of facilities includes the dance studio and the exhibition wrestling area with its own storage, showers, and lockers.

Designed with an eye toward the future, the walls and partitions are flexible, permitting rearrangement of spaces as needs change. Expansion also is possible south of the physical education building, should the need arise for an additional swimming pool or gymnasium.

Resilient Track

(Continued from page 33)

washer prevents it from being tightened tightly to the sole. This doesn't seem to be of any consequence.

If, however, the socket is bent considerably, it's possible that the spike may not tighten itself straight, leaving one edge protruding to dig into the track.

The other shoe we use has a washer or disc surrounding the socket which is easily removed, and the spike fits perfectly. When converting back to the hex-headed spike, the washer or disc is easily replaced. There's no indication at this time that removing the original washer from this shoe will cause any damage.

After one year of use, this new spike has proven to be better than the hex-headed spike on a grasstex track. One change will be made on this spike, and that will be to lengthen the point from $\frac{1}{8}$ " to $\frac{3}{16}$ ". This will insure a bit more gripping power.

An item of concern was the various thread sizes used by the many manufacturers of track shoes. It would be ideal if a common thread was used by all. Unfortunately, this isn't the case. Hence, if track shoes other than those mentioned are used, be specific in ordering to insure a proper fitting.

This new spike weighs just slightly more than the hex-headed outdoor spike. The cost of this new spike hasn't been estimated as yet. If there's ever a demand for them, they'll probably be stocked. But on special order, they may cost a bit more.

Some problems developed. The holes into which our special wrench fits become clogged and require cleaning before the wrench can be applied. Also, a small amount of track surface collects on the disc, but seldom in any quantity. These problems are minor.

The number of grasstex tracks are on the increase in the United States. Its advantages are many, but these tracks require some special considerations, one of which is the track spike. This new spike seems to be a step in the right direction insofar as removable spikes are concerned.

Wisconsin trackmen are using this spike, and whenever possible visiting teams will be fitted with it also. Not only because it's better suited to a grasstex track but to give us as much experience as possible in assessing and improving this spike.

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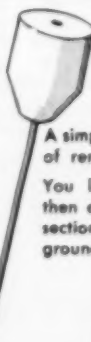
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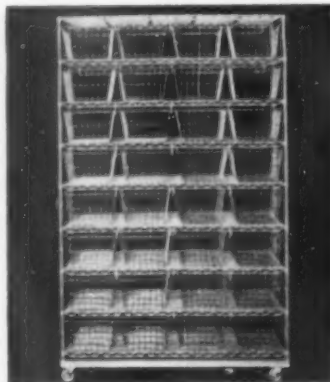
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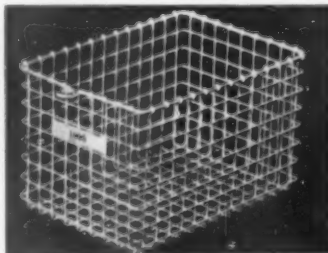
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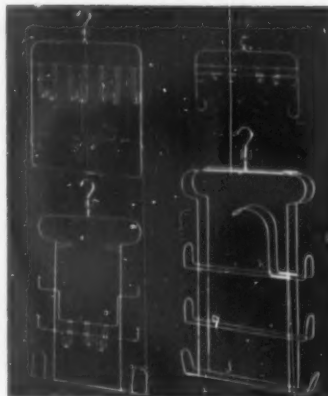
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Write for further information and school costs.

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Shooting Your Football Games

(Continued from page 7)

K-100 Camera and the Kodascope Analyst Projector.

Does it take an experienced professional to film football games?

If a school can afford an experienced photographer, it will pay off in the long run, with well-exposed and well-directed footage. However, many schools cannot afford or don't have access to a professional.

In this case, the ideal solution would be to find a camera enthusiast, preferably from one of the first few grades in high school, and have him observe some professionals filming games in nearby college towns, etc. Perhaps hiring a professional for one or two games to get the student cameraman set up would be most beneficial.

It's most important for the cameraman and coach to work closely, especially if the cameraman is inexperienced. They should sit down after reviewing the films of each game, and discuss how the filming of that game could have been improved.

The early training of a cameraman is important. He's then prepared to give you several years of service; and in that time, he can train assistants to take over when he graduates.

What's the biggest difficulty that the amateur will encounter?

Proper exposure! The professional cameraman always uses a meter, even after years of experience. We take an average of 37 light meter readings at each game. The light drops throughout the afternoon, shadows are cast over different parts of the field, etc.

Exposure is especially difficult on a partially cloudy day, or when a player runs out of the shadows and into the sunlit portion of the field. Contrasting jerseys can also lend difficulty to exposure problems.

Weather can also present a difficult problem, especially heavy snow or heavy rain. I remember when space difficulties combined with weather to make it almost impossible to film a game. That was the 1950 Cornell-Penn game at Franklin Field.

Each cameraman was allotted a very small working area. That made it hard enough to set up the equipment, even on a clear day. But that day we had a hurricane, and it was all we could do to keep our cameras and ourselves from getting blown off the pressbox roof. But we did get our pictures!

What are some of the basic uses of the films?

The coaches analyze each player's performance. They see what plays did or didn't work, who made the mistakes, who played well. They study offensive strategy and defensive tactics.

Films of the next week's opposition are shown to the boys. These are the pictures of last year's encounter, or perhaps the last game played by the opposition (the past weekend). Many teams now have an exchange program, whereby films of the previous week's game are sent to the next week's opposition.

One of the best uses of football films is the detection of weaknesses in the opposition's best players. Back in his days at Pennsylvania, Chuck Bednarik was the nemesis of every opposing backfield. He seemed to be in on every tackle (and still gives that impression with the Philadelphia Eagles today).

Cornell's coach analyzed movies of Bednarik in action, and noticed that he always slid right or left behind his own line to stop the attack. Because of his justly deserved reputation, nobody dared to run right through his position on the line.

Cornell decided to take the chance of going straight at him. And it proved very successful. Only a careful study of the movies could have revealed why Bednarik was stopping so many attacks.

On another occasion, the coaching staff wondered why Hal McCullough was getting many of his punts blocked. The mystery was solved through analysis of the game movies. These showed McCullough taking a little extra motion, which slowed up his kick just long enough to permit the opponents to penetrate deeper into the backfield.

Exactly what happens to the film after the game?

The school usually has an arrangement with a nearby processor for rapid processing service. The coaches have their films returned the night of the game, or the next day, depending on location, etc.

The coaches review the film first; then, on Monday, go over each and every play with the entire team viewing. Often the quarterback will view the films for a second time in a private session with the coaches.

The film is then sent to the next week's opposition, and upon return is filed. It will be used again several days before the next year's game with that particular opponent. At this time it's shown to the team so they can analyze the tactics of the opposing coach and spot weaknesses of returning players.

Versatile Safway 'Budget Master' Steel Bleachers Assemble in 5, 10 or 15 Rows



(ABOVE) 5-row Budget Master steel bleachers located on both sides of football field. (BELOW) Same equipment re-assembled as a single 10-row bleacher. The only additional parts are simple box frames under the top 5 rows, and guard rails.



PORTABLE SECTIONS MOVE WITHOUT DISASSEMBLY—OUTDOORS OR INSIDE

CROWDS OF ANY SIZE from 20 persons to 10,000 or more can be seated economically on Safway Budget Master portable steel bleachers.

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Budget Master bleachers are engineered to provide unobstructed vision, ample leg-room, easy climbing and complete spectator safety. Cross braces tie supporting frames into a unified steel structure that evenly distributes strains and shock loads.

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Submit details for analysis by Safway seating engineers (no obligation). And write today for **FREE BULLETIN 41Y**.

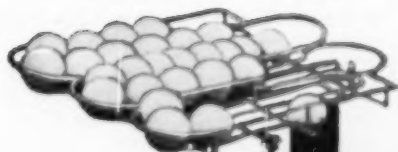


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J6V—Choice of the 1960 Rose Bowl game. The Cushion Control® J6V is designed with a special layer of cushion foam just under the cover. Backs, ends and centers gain added confidence from its solid, secure feeling. It's the finest football ever made to meet the needs of today's air minded game.

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Exactly as Used in World Series **JACK CORBETT, Van Nuys, Calif.**



Sometimes the films are used for alumni club showings and for students who wish to see their school's last away game, etc. This is done quite extensively at Cornell.

In some communities, such as Brighton, N. Y., a community booster club will sponsor the movies, thereby aiding schools with the costs. Television stations will sometimes offer the same service, as long as they can show the film on the day after the game.

What percent of the high schools are now filming their football games?

Almost all high schools of any size are using motion pictures. Equipment costs are the major obstacle, but schools now realize that the equipment can be of use in many other facets of school activity. The camera can be used to record events within the school: graduations, scientific experiments, plays, etc.

The projector, of course, has unlimited use. Motion picture teaching aids are available from a variety of sources, and are most essential to the success of an educational curriculum.

In the final analysis, then, it's almost impossible for a team to compete on an equal basis without using films.

NEW, SUPER RAPID MOVIE PROCESSING

HOW would you like to "shoot" a movie of your football or basketball team, golfers or tennis players, then project it on the screen for analysis only minutes later?

That's the story of a new, amazingly fast film processing technique called Rapromatic Processing.

The film can be taken with any 16, 35, or 70-mm. movie camera. A special Rapromatic Magazine is the only adaptation required.

The "secret" lies in a chemically presaturated roll. This develops and fixes the movie film in the magazine as the film is exposed. The process produces a negative film. That is, instead of a black-on-white picture, you get a white-on-black picture.

Its possibilities are enormous. Only minutes after shooting your individual golfers, tennis players, wrestlers, baseball players, or track men—or shooting a football or basketball scrimmage or game—you can throw the film onto the screen for detailed analysis!

The benefit to the athlete is immeasurable. He no longer has to keep a mental image of himself in action. In just a few minutes he can actually see his performance—and take the necessary steps to correct himself in accordance with instruction.

Bowl in the Gym

(Continued from page 52)

CONSTRUCTION OF ALLEY

Construction of a 10 pin set-up needn't be difficult. The simplest method is to mark the floor free hand, making sure that the ball to be used cannot fit in between two parallel pins without knocking one of them down. Perfectionists can get the proper information from most any local bowling alley and adapt the measurements to fit the gym.

Since a softball and indian clubs are usually readily available, the following description should be adequate enough for a 10 pin set-up.

1. Place head or No. 1 pin 2' from rear and side walls.

2. Establish No. 5 pin directly behind No. 1 pin, 4½" away and 2' from side wall.

3. For No. 4 and No. 6 pins, measure 4½" on either side of No. 5 pin parallel to the rear wall.

4. Draw lines from No. 1 pin to No. 4 and No. 6 pins. On this line, midway between, establish No. 2 and No. 3 pins. No. 2 pin is placed between No. 1 and No. 4 pins. In same manner, create No. 3 pin.

5. Directly behind No. 2 and No. 3 pins, parallel to the side wall, set up No. 8 and No. 9 pins, 4½" away. Place No. 8 pin under No. 2 pin; No. 9 pin under No. 3 pin.

6. Continue lines originally drawn from No. 1 to No. 4 and No. 6 pins toward rear wall. Draw a line through No. 8 and No. 9 pins. Where these lines cross, place No. 7 and No. 10 pins.

HELPFUL AIDS

Many fine audio-visual aids are available with which to supplement the bowling unit. Films can be obtained free or for nominal charge. Check the major beer distributors, bowling companies, the American Bowling Congress, or Guide to Free Films for those needed.

Many books are easily acquired. Pamphlets are yours for the asking from the American Bowling Congress, brewery companies, life insurance companies, and bowling manufacturers. In fact, the local bowling alley may have some on hand.

The Athletic Institute also produces booklets and filmstrips that can be purchased by the department.

Bowling can be part of any physical education program. Many aids

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Master No. 1500

Same design and construction as No. 1525... but without key control.



Wrist strap weights develop complete arm and shoulder

Wear during warmup, during practice, on the field, in class, at night (inside or outside of socks). Used by 1922 high schools, 53 colleges, 2 pro football teams. Used by champions in football, basketball, baseball, track, boxing and wrestling. A great conditioner.

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WEIGHT CONDITIONER

Keeps arms and legs hard as rocks. 12% Stamina increase **PROVED** by service tests

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OLYMPICS (Used by Olympic Champions)	
Leg Weights, cushion ft. pr.	\$14.95
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REGULAR	
Leg Weights, per pr.	\$ 9.95
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Perfect track leveler & conditioner	249.50

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All-Electric Swimming Scoreboard

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If timing and scoring are important, Fair-Play has a scoreboard for the job . . . even soccer, hockey, baseball, wrestling, track, gymnastics, etc. Let us know your needs. See American School & University buyer's guide in your business office or write for Basketball Catalog 27A, Football Catalog 76 or Baseball Catalog 81.

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If you are tired of being in a rut, investigate what other coaches have done in this highly profitable field. Send for the facts today. All inquiries confidential. Write, giving phone number. This may be the big break you have been waiting for. Write today.

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are available. Interest is easily obtained and retained. It's simple to teach. As the program progresses, each instructor will devise another new drill or better way to organize, conduct, or supervise this activity.

The carry-over values are extremely important in this day of growing leisure time. We must prepare our youth to spend this time in some form of beneficial physical activity. Why not bowl in the gym?

Reconditioning Tips

(Continued from page 30)

presses for inserting posts and washers into the shoe—necessary for attaching the cleats—and the athletic shoe maintenance section includes automatic riveting equipment.

Is all of this expensive? Well, brace yourself: reconditioning cost for equipment of an average high school is approximately \$2,500 per season. And this is for equipment for which the replacement parts would be approximately \$25,000. Of course, this is an average price, but it does represent the cost of replacing parts of many pieces of equipment plus freight, delivery, storage, insurance, and handling costs.

How can a professional reconditioning service afford to do it at such a low cost? The answer is volume—and practically no investment in distribution facilities such as maintaining regional offices, etc. To simplify what for many industries is the most expensive part of its operations—distribution—the modern service utilizes a system of regional "agents."

In many areas these are part-time "representatives," most of whom are teachers and coaches who have some free time during the year and can contact schools in their immediate area. This arrangement is a natural, since coaches know athletic equipment and are familiar with other coaches in their conference.

The part-time agent operates on a commission basis, within a relatively small territory, of course. His duties involve coming to a school at the end of each sports season, then inspecting, checking, counting, packing, and arranging for shipping.

Special shipping containers, properly marked, are provided to simplify this operation. Thus, the coach or team manager—the customer—need only sign for the material . . . he's relieved of all tedious detail!

If you've been wondering why your teams haven't been playing up to par, you might check your organization. It might be a problem of morale—stemming from poor equipment. A little thing like that might throw several boys or even an entire team out of whack, particularly when they see the opponents better equipped than they are.

The maintenance of equipment is an important factor in program planning.

Octagonal Concrete Gym

(Continued from page 10)

gym is its unusual roof design. The octagonal plan is sheltered by eight concrete hyperbolic paraboloids with an average thickness of four inches, which span a diameter of 160' with no interior supports.

The visual effect of the paraboloids, both inside and out, is nothing short of breathtaking. The springing, undulating curves with their appearance of lightness belie the great resistance to external stresses which is an inherent quality of the curvilinear shell structures. The selection of this particular shell shape was not, however, arbitrary or based solely upon its structural merits. Two other very important factors were necessary considerations: plan function and cost.

From past experience gained through the design and construction of other shell structures, the architects were quite impressed with the potential economy latent in the eight-sided hyperbolic paraboloids. Concrete thin-shell buildings previously planned by the architects had shown that maximum economy could be gained by utilization of curved shells through reduction of the amount of steel and concrete needed to resist external and internal forces and through the repetition of basic casting shapes in order to effect the greatest amount of re-use of form material. From this, the Western Heights gymnasium was a born money-saver.

The happy results from the hyperbolic paraboloids with relation to the building functions can best be illustrated by several features of the floor plan and interior enclosure. The vertical height of the shells—in this case an engineering demand rather than an economic hindrance—allowed a unique vertical arrangement of rooms and areas not to be found in most gyms.

Grouped around the courts on the lower level are all facilities for students and instructors, including, in addition to necessary shower and dressing accommodations, such conveniences as coaches offices which open directly onto practice courts, private shower and toilet facilities for instructors, and space and equipment for laundering and repair of equipment. Contained on the upper level mezzanine completely surrounding and overlooking the court are all public and spectator spaces.

The octagon formed by the hyperbolic paraboloids provided excellent opportunities to locate the

maximum number of seats in the most desirable spot near the center of the playing court on each side, and to locate entrances and panic exits at the strategic corner locations with minimum loss of usable interior space.

At the backstop ends of this same floor level are multi-purpose areas which may be used for instruction and practice in wrestling, boxing, and other individual sports, or may be used to seat overflow crowds

during tournaments. Public toilets and ticket offices are located at ground level halfway between upper and lower levels.

Abundant natural light is evenly distributed through the great room by glass around the perimeter, and balanced by the liberal use of sky-domes in the roof above. Partitions throughout are glazed tile, the floors are vinyl asbestos or exposed concrete where practical. A white reflective roof and asbestos fibres sprayed on the ceiling provide excellent thermal and acoustical insulation. Heating will be by a circulating hot water system.



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(Continued from page 5)

The professors could have borrowed some from their football coach, Murray Warmath, whom the same mob tried to "lynch" last year. They hung him in effigy every day, viciously harassed him with midnight calls and scurrilous letters, even hounded his wife and kids.

The aim of this hate campaign was to chase the coach out of town, and the mob kept the tar boiling and the feathers ever handy. But Coach Warmath told them to shove it. "I have two years to go on my contract," he declared, "and I fully intend to fulfill it."

Too many of our policy makers can face life only from the security of an ivory tower.

IN HIS great new coaching text, *Bread and Butter Basketball*, Doggie Julian relates an anecdote that perfectly sums up the responsibility of the parent, teacher, and coach. You certainly ought to be able to find a spot for it in one of your speeches.

One evening eight-year-old Johnny started bombarding his tired dad with questions about the world. His father finally went over to the bookcase and pulled out a map of the world. He tore it into small pieces, got some scotch tape, and said: "Here, Johnny. Put this map of the world together. When you're finished, I'll answer all the questions you want."

He thought that would take care of Johnny for a couple of hours. To his amazement, Johnny was back in 20 minutes with the map of the world in perfect alignment.

Dad shook his head in bewilderment. "Johnny," he said, "how did you do it?"

Little Johnny smiled. "It was easy, Dad. Look!" He held up the map, then turned it to the other side.

"You see, Dad, on the other side is the picture of a little boy. If you put that boy together right, the world will be all right."

TO THE people who know their choice meats best, the supermarkets of Ohio, Pennsylvania, Texas, Illinois, and California have always rated tops in football beef.

The reason is as simple as a quarterback sneak. All these states boast heavy populations, lots of high schools, a rich football tradition, and

superlative coaching.

Though Mississippi is never mentioned in this exalted company, we'd still like to tip our helmet to them. Somebody down there must be doing a helluva job. Despite a population of just two and a quarter million, the Magnolia State is producing an awful lot of quality players.

Look at the University of Mississippi. Using practically 100% home-grown talent, the Rebels invariably wind up in the country's top five. Over the past nine years, they've compiled a 74-11-5 record in big-time company.

That certainly rates a good substantial Rebel yell.

WHILE on this talent-source kick, we made a quick study of the Big Ten rosters, and the results confirmed our suspicions. In this greatest of football leagues, Illinois and Ohio lead in talent production. Illinois has supplied 159 players to the Big Ten mills, while Ohio has contributed 154.

You might be interested in the following breakdown, showing the distribution of home-grown, Ohio, Illinois, Pennsylvania, and other out-of-state kids on each Big Ten roster:

School	Home	Ohio	Ill.	Pa.	Others
Illinois	63	4	—	1	7
Indiana	29	14	6	9	26
Iowa	11	1	12	4	28
Michigan	39	13	9	4	7
Mich. St.	44	12	3	10	9
Minnesota	65	0	3	4	19
Northwest	29	19	—	1	13
Ohio St.	61	—	0	3	8
Purdue	12	26	15	13	9
Wisconsin	39	4	19	0	5

The figures are most intriguing, of course, but not really conclusive. In appraising them, certain facts must be taken into consideration: The location of the college (schools located on state borders often find it easier to recruit in adjoining states than in their own), the population and number of high schools in the state, the number of other colleges in the state that draw upon the high school material, etc.

The statistics reveal some interesting slants. Ohio fans who claim that everybody is constantly raiding their rich preserves will be rather surprised to note that Minnesota and Iowa, the Nos. 1 and 2 teams

in the conference this year, hardly depended on Ohio-born talent. The Gophers rostered nary a Buckeye, while the Hawkeyes registered just one.

Ohio State, which is closest to those rich Pennsylvania grid mines, only dug up three kids from them, while Michigan State tapped 10, Purdue 13, and Indiana 9.

Iowa, judging from its 1960 roster, is going continental in its recruiting. The Hawkeyes fielded a squad that rostered just 11 home-bred kids, their 45 other squad members hailing from 14 other states, including South Dakota, Washington, California, Virginia, and Washington, D. C.

IT'S probably only a question of time until the NCAA stomps out that plague known as "red-shirt-ing"—the practice of holding promising athletes out of competition when there's no immediate need for their services, then activating them a year later.

It's a tricky little gimmick that enables tricky little coaches to stockpile a constant supply of talent. After a year on the shelf, the hold-outs bob up stronger and wiser but still sophs (or juniors) athletically.

The answer to this chicanery is quite simple: A universal rule stipulating that an athlete can only represent his school during the four consecutive years following his date of matriculation.

As it is now, the Big Ten is the only major conference we know of that operates under this rule, though the Ivy League subscribes to it by gentleman's agreement.

We've waited patiently for the progressive Eastern College Athletic Conference to boot the red-shirting abomination out of existence. And we thought our patience would be rewarded last month, when the four-year rule was finally put up for adoption.

The major opposition, it was thought, would come from the big wheels—Syracuse, Pittsburgh, and Penn State, who've been helped by red-shirting programs.

Ironic is just the word for what ensued. When it came time to stand up and be counted, Syracuse, Pitt, and Penn State proved their stature by voting for the four-year rule. But the bulk of the membership voted against it!

All sorts of reasons were advanced, of course, but one fact remains: A conference that has always stood for ethics and progress failed to give the nation leadership.

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or be fitted into the regular schedule later on*

WITH wrestling becoming the fastest growing high school sport in the country, many coaches have expressed a desire for more good drills with which to teach the fundamentals.

Nearly all the successful coaches recognize the importance of a carefully planned and organized system of drills. It's through drill and only drill that a coach can stimulate interest and be reasonably sure of good performance in competition.

I'd like to present a wide selection of drills that the high school coach can include in his practice organization. No claim is made as to the originality of many of them. Many fellow coaches, sometimes unknown to them, have contributed their ideas in the development of these drills.

Drills 1, 2, and 7 are taken from Raymond Sparks' *Wrestling Syllabus*, published at Springfield College, and are included because they're the basis for other drills.

The drills can be divided into types: those of short duration that can well serve as warmups or mat drills at the beginning of practice, and a second group of longer duration that can be fitted into the regular practice schedule at appropriate times.

Let's first examine some warmup drills:

1. On-Guard Position and Spot Running. The wrestlers spread over the mat area, leaving as much distance between them as space permits. They assume an on-guard position, with the feet spread about shoulder width, weight on the balls of the feet, body bent slightly forward at the waist, the inside of the upper arms pressed against the sides of the chest, and either foot slightly forward.

On the whistle, the wrestler, maintaining the on-guard position, begins to spot run. This is running in place while keeping the feet as close to the mat as possible in order to touch the mat as rapidly as possible. On the next blast of the whistle, the wrestler stops spot running and assumes the on-guard position.

This is repeated, letting the boys rest a few seconds in the on-guard position, and then spot running for 15 or 20 seconds. This drill is an excellent early season conditioner.

2. Block Tackle and Up Drill. This is a follow-up to the on-guard and spot-running drill. While the wrestlers are spot running, they're informed that the next whistle will be a signal to drop to their knees with hands up, not on the mat, to block an imaginary leg tackle. As soon as they've completed the move, they quickly return to their feet and continue to spot run, waiting for the next whistle to repeat the move. This drill is good for developing agility and condition.

3. Dropping In for the Leg Tackle. While the wrestlers are spot running, it's announced that on the next whistle they should push hard off their toes and drop forward on their knees with hands up, as if going in for a double-leg tackle. As soon as the move has been finished, they quickly return to their feet and continue to spot run, waiting for the next whistle. This is repeated a number of times.

If the maneuver is done correctly, the wrestler will slide forward across the mat on his knees for a short distance. This is a good drill with which to impress young wrestlers with the importance of dropping in deep on his opponent when shooting the double-leg tackle.

4. Open-Stance Drill. The wrestlers pair off with a boy their own size. From an open stance facing each other, they attempt to touch their opponent's knee. The coach should be

sure to emphasize good position and movement on the feet while at all times protecting the legs.

This is an excellent way to teach young wrestlers correct movement on their feet. One of their most common mistakes is crossing the feet. To make the drill more competitive, one point can be given for each successful touch.

5. Quarter-Eagle Drill. In this reaction and agility drill, the wrestlers assume an on-guard position facing the coach. On the command of right or left, they make a quarter turn in the correct direction. As the wrestler's reaction improves the coach can speed up his calls.

Another added feature can be a sharp blast on the whistle to signal the wrestler to drop to one knee and get up again quickly after the turn is completed. This is a good morale drill, since, after a series of commands, there are always a few boys facing the opposite direction from the rest of the squad.

6. Sit Out In Place. The wrestlers assume a referee's position (underneath) on the mat. On the whistle they sit out, turn either in or out, and return to a referee's position on hands and knees. After checking for form a few times, the coach can tell them to continue to sit out in place until the next whistle stops them. A series of 10 or more sit outs can then be accomplished.

7. Spike Drill with Variations. This is an excellent conditioner which also develops the desirable skills of balance and agility.

The drill begins with one wrestler on his hands and knees and the other on top in a floating position. The man on top keeps his chest in contact with the scapular area of the bottom man. The coach can tell the boys that it's like having a large spike driven through the back of the top man down into the back of the bottom man. The spike serves as a pivot for the top man to move in a circular motion around the bottom man, keeping his weight on the opponent's back.

On a whistle the top wrestler begins to spin, staying mostly to the back away from the head. Every three or four times, the top man can make the complete circle. After about 30 seconds, the wrestlers change places.

A few variations offer themselves once the boys become skilled at the simple spinning procedure. Let the bottom man move forward and backward while the top man is spinning. Tell the bottom man to collapse an arm to try and throw the top man off balance.

After these variations have been

By DAVID S. CROCKETT, Former Coach, Worthington (O.) H. S.

accomplished, let the top man place his hands behind his back and keep his floating position, while the bottom man moves forward and backward. This drill is fun, as the boys often find themselves in awkward positions, as well as a good morale drill.

8. **Rock of Gibraltar Drill.** Drills sometimes mean more to athletes when given a descriptive name. In this drill the wrestlers assume a referee's position on the mat. The object is for the bottom man not to get broken down and to stay tough. The top man can use any legal means to break the bottom man down. The bottom man makes no effort to escape or reverse. He simply tries to keep from being broken down. He's allowed to pull an arm or move a leg.

Make this a rough drill, and use it to remind the wrestlers that it's much harder to escape or reverse when you're broken down to your stomach than it is when you stay up on your hands and knees. They stay as strong as the Rock of Gibraltar.

9. **Takedowns Against a Stationary Opponent Stressing Form and Speed.** This is an effective drill for teaching takedowns to young wrestlers. One man simply assumes an on-guard position and offers no resistance to the takedown. The other wrestler shoots a takedown while the coach watches his form.

Each boy shoots about 10 takedowns, then they switch roles. The takedowns are done at full speed. If the squad has learned three or four basic takedowns, they'll practice 10 of each in rapid succession.

10. **Switches.** This is a very simple drill with which to practice the important switch maneuver. From the referee's position, the bottom man switches the top man. As soon as the maneuver is finished, the bottom man switches the top man. This is continued until each wrestler has switched his opponent five or six times. Experienced boys will want to mix in short or inside switches during the drill.

11. **Escapes from Pinning Combinations.** This drill begins with the wrestlers in either a half-nelson and a crotch or a reverse-nelson and a crotch pinning combination. The men should be instructed in the proper method for escaping from these holds. The boy applying the pinning hold should do so loosely in the beginning to give the bottom man an opportunity to escape. When the coach blows the whistle, the bottom man has just 30 seconds to try to break the pinning combination.

To make the drill competitive, one point is awarded to the top man if he maintains the pinning combination, while two points are given to the bottom man if he breaks the hold. Stress that along with the proper technique, determination to get off the back is paramount. This is also a good drill with which to teach the proper techniques of pinning an opponent.

The drills discussed so far are those of short duration that serve as part

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of the warmup routine. Let's now look at another group of drills which take a little longer to execute and which can be included as part of the regular practice schedule.

12. Drills to Develop Chain Wrestling. One of the most difficult things to teach a wrestler is to move in a series. Too many inexperienced boys make one move and then stop. This destroys the effectiveness of the escape pattern, giving the wrestler on top time to adjust and counter the bottom man's moves.

One of the most effective ways of teaching this most essential skill—to keep moving—is the series of chain drills. These not only teach the bottom man to keep moving, but also teach the top man to counter the moves as quickly as they're made.

The drill begins with the wrestlers assuming the referee's position on the mat. The coach indicates what the sequence of moves will be. In the beginning, each man is given a letter A or B, and the sequence is kept simple, with each man having only one of two moves. As the boys become more skilled in the moves and counters, more can be added.

Some examples of chain drills, starting with a sit out, follow. The idea can be adapted to any series of moves the coach wishes.

A sits out. B follows (common counter to sit out). Boys change places. B sits out. A follows.

A sits out. B follows. A rolls (arm or far-side roll). Change places. B sits out. A follows. B rolls.

A sits out. B follows. A rolls. B re-rolls. Change places. B sits out. A follows. B rolls. A re-rolls.

A sits out. B follows (common B stepover counter). Change places. B sits out. A follows. B switch. A stepover counter.

PERFORMED VERY RAPIDLY

This drill is done very rapidly. As soon as the moves have been completed, the coach blows the whistle and the boys return at once to the referee's position to await the next call. The examples give you just a small idea of what can be done with the chain drill. Since the various sections of the country differ in terminology, I won't attempt to elaborate on the possibilities of this type of drill.

13. Takedown Game. This drill is conducted at full speed and is very good for working on takedowns. The wrestlers pair off and spread over the mat. The number of pairs that can work at one time will depend on the available room. Two pairs on the average size mat is enough. Don't crowd the boys or you'll have them falling over each other with the possibility of injury.

Using a stopwatch, the coach blows his whistle and gives the boys one minute to execute a successful takedown. If a takedown is accomplished,

BEFORE becoming assistant director of admissions at Kenyon College this year, David S. Crockett coached the wrestlers at Worthington (Ohio) H. S. In his two years as head coach, his teams compiled a 22-1 dual-meet record and a 33-3 overall mark (including quadrangular and invitational tourneys). Coach Crockett turned out seven Central District individual champions and six runners-up, and also had two boys place in the top four of their respective weights in the 1960 state championship.

the boys keep wrestling until they hear the whistle.

The boy losing the takedown must do pushups. However, if after the takedown the opponent escapes or reverses the top man before the time limit, the takedown is void.

14. Quick Escape. This drill should be worked on every day against time. It teaches the bottom man to make an all-out effort to escape or reverse in a limited time period, conditioning the boys to move on the whistle.

The boys take a referee's position, spreading over the mat area, and not overcrowding the mats. It's better to work two groups than to work so many as to prohibit freedom of movement.

The coach, using a stopwatch, announces the time limit. He then blows his whistle to start and end the time period. Starting with 10 seconds, he works up to 30 seconds. If a wrestler escapes or reverses, they continue to wrestle as in the previous drill.

During the early part of the season, when you're working on a certain escape, tell the bottom man that that is all he's allowed to use.

15. Round Robins on Takedowns. This usually will be a popular drill. Starting with the two lightest squad members, give them one minute to complete a successful takedown.

The boy who wins the takedown remains on the mat and is challenged by the next wrestler closest to his weight. If no takedown is secured in the one-minute time limit, the boy being challenged remains on the mat. He must be taken down to lose. The initial starters wrestle until one secures a takedown.

If enough mats are available, two groups may be working round robins at the same time. The lighter weight can work on one mat and the heavier boys on the other. This drill can also be run from a referee's position, working on escapes and reversals.

The author hopes that some of these drills will prove helpful to high school coaches. Remember, it's only through carefully planned drills that a boy can develop the fundamentals necessary to become an accomplished wrestler.

Penn St. Stadium

(Continued from page 14)

two days after the final home game, workmen moved into the stadium and began to disassemble the steel deck grandstand. The deck plates were disassembled in large sections. The structural columns and girders were unbolted, transported to the new site, and re-erected in front of the newly erected 15,000 seats stands, and the deck plates replaced.

The erection at the new site progressed in the same order as the dismantling. This allowed both the dismantling and erection to be carried on simultaneously!

The work was beautifully coordinated and executed with the ease of a small boy playing with his Erector Set.

When Boston University moved in for the opener on September 17, they found one of the largest and most beautiful steel deck stadiums in the country. The new side sections were 70 rows high with a total of 80 rows directly in front of the press box. The horseshoe section remained a 30-row stand. Total capacity was now 45,000.

Penn State is proud of its stadium's argosy. After each addition over the past 25 years, the plant has emerged as a freshly completed stadium, with no patchwork effect.

Nothing was ever wasted. All the existing steel was reused. And all the work was carried on without interrupting the athletic schedule!

HISTORY OF STADIUM

Date	Description	No. of Seats	Tons of Steel
1934	20 rows x 180' —West Side	2400	85
1936	Increased West stand to 40 rows x 306'	5800	115
1936	20 rows x 180' —East side	2400	85
1937	Increased length of 20-row East stand to 306'	1700	60
1939	Increased East stand to 40 rows x 306'	4100	150
1948	Increased length of each 40-row stand (East & West) to 378'	3500	132
1949	Enclosed North end of stadium with 30-row horseshoe stand	9600	377
1949	Four-story steel press box		93
1959	Relocated stadium and added 30 rows behind both East and West stands (40 rows in front of press box)	15000	1280
		44,500	2,377

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COACHES' CORNER



Please send all contributions to this column to Scholastic Coach, Coaches' Corner Dept., 33 West 42 St., New York 36, N. Y.

THE California five was mighty proud of its defense under the coaching of Pete Newell, one of the greatest defensive mentors in hoop history—until, of course, the 1960 NCAA final, when Ohio State hit 16 of its first 17 shots and missed only three during the entire half.

Gathering his demoralized kids around him in the locker room, Newell patiently explained that they'd have to get more board control.

"Darrell," he said, pointing a finger at his big All-American center, "we've got to get more rebounds off the defensive board."

"Gee, Coach," sheepishly replied the big fellow, "every ball I rebound has already gone through the hoop."

Beans Reardon, the famous ump, once called Danny Murtaugh out on strikes. The fiery Irishman blew his top, forcing Beansie to toss him out of the game. Halfway to the dugout, Danny suddenly retraced his steps.

"Beansie," he said softly, "do you know what you've just done? Look around you. There's Furillo in right field, Amoros in left, Robinson on second, Lavagetto on third."

"Do you realize, Beansie, that when you threw me out, you left yourself the only Irishman on the field? You're all alone, Beansie, all alone."

After one of Uncle Sam's arid streaks in the 1960 Olympics, a girl was overheard asking her boy friend, "What happened in the Olympics today?"

He retorted, "Nothing happens on Sunday."

And she replied, "It's a good thing—we'd have finished second in church."

To stir up the publicity mills last summer, Ben Kerner, the man who fires all those managers in St. Louis, offered the Los Angeles Lakers \$500,000 for Elgin Baylor.

This made his newest manager, Paul Seymour, gasp: "When I heard Kerner was offering a half million

dollars for Baylor, I thought he meant Baylor University."

The second-string qb, attempting to make a deposit in the local bank, was sharply reprimanded for filling out his deposit slip improperly. When he returned later, after rectifying his error, the teller apologized to him.

"Oh, that's all right," said the boy. "I'm the second-string quarterback at school, so I'm used to being spoken to as if I were an idiot."

When Clarence Rowland, current Cub vice-president, was making his managerial debut with the White Sox, he vehemently protested a close play at second.

Umpire Dick Nallin, then also a rookie, finally lost his patience. "You're through, busher," he shouted. "I've seen enough of you for today."

"Just what I was afraid of," sadly replied Rowland. "I knew that I'd get the gate sooner or later, but I expected some real big leaguer to chase me. I thought us bushers would be sticking together."

Harvard was demolishing Yale in 1927. With a two-touchdown lead, the Crimson coach put in a little fellow named Hammersely. The ball was then on Harvard's 45. The center snapped to Hammersely and the pony back took off around end. His interference swept everything before him. He raced 55 yards without having to change pace, cut, or use a stiff arm.

Benny Friedman, watching the game from the press box, turned to the famed humorist, Ring Lardner. "Wasn't that some run!" he enthused. "Did you see him carry that ball 55 yards!"

Lardner shrugged his shoulders. "Hell," he said, "anybody could do it. It's not that heavy."

The N. Y. Giants launched their new Professional Quarterbacks luncheon club at the renowned Italian restaurant, Leone's, and the talk turned to the best means of picking the All-Pro team. All sorts of complicated ideas were punted around, until Frank Gifford came up with the simplest solution:

"Any fellow who can eat one of these seven-course Italian lunches and still stand up and take a bow is an All-Pro all the way."

The duffer finally smote a drive within distance of the green and eagerly turned to his caddy. "Do you think I can reach it with a six?"

The diplomatic bag-toter nodded his head gravely. "If you hit it often enough, sir."

Arlington State was taking a drubbing in an NAIA game which permitted the qb to come to the sidelines and talk to the coach. Having enough trouble the way it was, Coach Chena Gilstrap always managed to busy himself whenever he saw the qb approaching for advice.

Finally the qb shouted so loudly that Gilstrap couldn't ignore him. "It's third and eight. What do you want me to do?"

"You're on a four-year scholarship, and I have a one-year contract," snarled Gilstrap. "You call it!"

Here's an inspirational message for athletes who are called upon to do the "impossible" by their coaches.

The scoffers said it couldn't be done, And the odds were great it wouldn't. But I tackled the job that couldn't be done, And what do you know? It couldn't!

The tyrannical, overweening athletic director called in his basketball coach and said, "I've heard you've been to church praying for a raise. Don't you know I won't stand for anyone going over my head?"

The irrepressible Rocky Bridges invariably shows up at the park hours before a game. Asked why he shows up so early, he explains: "It's easier to spit on the floor in the clubhouse than in your living room."

Vinegar Bend Mizell, the Pirates' southpaw, can also display a pretty good brand of rustic humor.

"What's the population of Vinegar Bend?" he's often asked.

"It's either 117 or 119," he replies.

"Two people went off into the woods a couple of months ago, and we don't know yet whether they're coming back."

Commenting on the manly way with which Richard Nixon took his hairbreadth election defeat, comedian Jerry Lewis told a Texas audience: "Nixon is such a good loser they ought to make him coach of the Dallas Cowboys."

In the midst of that 16-3 trouncing the Yankees handed the Pirates in the third game of the 1960 World Series, Gino Cimoli, coming to the plate, said to the Yankees' catcher, Elston Howard, "You guys better watch out. You ain't that good."

"Gino, you're right," retorted Ellie. "We ain't that good. You fellows just make us look that way."

When Casey Stengel was managing the Braves, he kept up a delightful mock feud with Frankie Frisch. One day Casey, stepping off a curb, was struck by a taxicab and suffered a broken leg.

The first telegram to reach him at the hospital was from Frisch. It read: "Your unsuccessful attempt to commit suicide deeply lamented."

The basketball coach ran into his assistant on the way to the gym and immediately started babbling: "Oh, boy, did I have the greatest dream last night. I dreamt I met a beautiful blonde with a 38-22-38 figure, who grabbed me by the arm and told me she had always admired me, then insisted upon taking me up to her room—where she introduced me to her 7-foot 3-inch kid brother."

Pat Kennedy, the most colorful basketball ref of all time, was working a Rochester-Fort Wayne game, when a Royal player was fouled going in for a lay-up. Unfortunately, Pat's whistle got stuck in his throat. As he lay on the floor convulsed in agony, Rochester coach Les Harrison ran over, fell to his knees over the gasping ref, and cried:

"Pat, Pat, before you strangle to death, motion that the basket counts!"

About the only man who can do a halfway decent job on Wilt Chamberlain is the great Celtic center, Bill Russell. He explains it this way:

"Wilt is sort of a special problem. He can do just about everything. So you've got to experiment from game to game and minute to minute. I use a three-part defense against him. One, I try to keep him away from the ball. Two, if that doesn't work, I try to stay between him and the basket."

Bill will pause at this juncture, and the observer will invariably ask, "And what's three?"

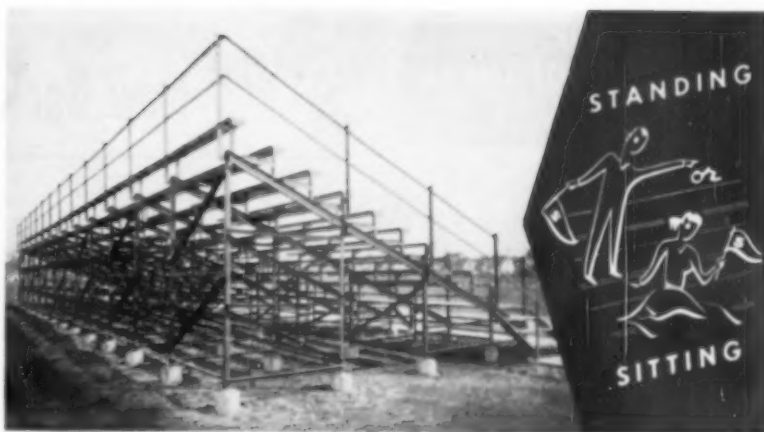
"Three," Bill will say with a grin, "is when everything else fails—I panic."

On this ominous, wind-swept night, John Carmichael, the Chicago columnist, bumped into Bob Feller at an airport. "John!" shouted Feller, then the greatest name in baseball. "I hope we're on the same flight."

"If we are" Carmichael replied, gazing apprehensively at the ominous heavens, "I'll cancel. Do you think I want to go down on the same plane with Bob Feller? I want an obituary of my own. I owe it to my family."

At one of the big sports banquets, the pictures of 30 all-time sports greats were flashed on a screen. As luck would have it, one of the slides got reversed, showing Ted Williams as a right-handed hitter.

This brought a sigh from Lefty Gomez, the former great Yankee hurler. "After 10 years," he wistfully said, "I now find out why I was pitching wrong to Williams."



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New Books on the Sport Shelf

- **HOW TO MAKE ATHLETIC EQUIPMENT.**
By Joel W. Carter. Pp. 390. Illustrated—drawings. New York: The Ronald Press Co. \$6.75.

THIS highly practical manual gives you detailed instructions for constructing more than 350 pieces of equipment commonly used in sports, physical education, and recreation programs.

Illustrated with 187 layouts and designs, the text lists all the necessary tools and materials and provides step-by-step directions for completing the work. The directions are kept simple so that anyone with average mechanical ability and access to common tools can make the equipment.

The items are listed alphabetically in 11 main sections, namely: baseball and softball, basketball, children's activities, football, general, gymnastic, individual and miscellaneous team sports, locker room, physical conditioning, track and field, and training room.

Written by the superintendent of parks and recreation in West Dundee, Ill., the book should prove a godsend to school men everywhere, particularly those who conduct their programs on limited budgets.

- **BUILDING A CHAMPIONSHIP FOOTBALL TEAM.** By Paul (Bear) Bryant. Pp. 244. Illustrated—diagrams. Englewood Cliffs, N. J.: Prentice-Hall, Inc.

SEVERAL summers ago we had the good fortune to moderate a football clinic featuring a half dozen of the greatest coaches in the land. Dwarfing them all was a tall, handsome, cold-faced, immensely magnetic person whom everyone, with respect bordering on awe, called "The Bear."

A great player, a great coach, and a great personality, The Bear is renowned as a "master builder." The surest way to bring a dying grid power to life is to bring in The Bear. In rapid succession, he has recharged the batteries of Kentucky, Texas A & M, and Alabama.

The Bear could have invented the term "hard-nosed football." In his book—a distillation of all his tremendous football savvy—he tells exactly how to whip your boys into top physical and mental shape, make the most of your coaching staff, plan for a game, train your quarterback, and set up a sound program of drills.

Admittedly one of the greatest defensive coaches in history, The Bear carefully details the construction of a system that works against all formations, including the numbering system, the nine basic techniques,

stance, surprise defense, victory defense, goal-line defense, split-T defense, adjustments vs. flanked backs and ends, and single-wing defense.

A bulky chapter on pass defense includes his celebrated five-spoke defense that eliminates all vulnerable areas in the secondary, his four-spoke defense, predetermined rotation, and stunting in the defensive secondary.

Other chapters comprehensively detail every phase of his renowned kicking game, running game, and passing game.

This is a solid coaching text—as sound, canny, and provocative as The Bear himself.

- **BREAD AND BUTTER BASKETBALL.** By Alvin F. (Doggie) Julian. Pp. 302. Illustrated—diagrams. Englewood Cliffs, N. J.: Prentice-Hall, Inc. \$5.95.

LONG renowned as a "coach's coach," Doggie Julian proves it with plenty to spare in this superlative coaching text. You won't find a clearer, sounder, fuller exposition of basketball coaching.

In genuine coaching language, neatly larded with pithy phrasing and wit, the Dartmouth coach beautifully expounds his teaching and coaching methods. For the opening tap, he elaborates on his 26 "magic numbers"—the principles and philosophies which can be applied to any player or team, regardless of their size or type of offense or defense.

Then, in order, he lays up his ideas on: Offensive fundamentals, defensive fundamentals, man-to-man attack formations, formation principles and plays, the Dartmouth offense auxiliary, attacking the zone, offensive counters for special situations; play principles, feeding the pivot, breakdown drills; Dartmouth's man-to-man defense, Dartmouth's zone defenses, and defense auxiliary and drills.

Next, Doggie delves into the vital matter of practice programs, including the pre-season organization and detailed (hour-by-hour) schedules for the first 26 practice sessions. Three fine chapters—in-season practices, coaching review, scouting reports; game procedures and strategy; and preparation for tournament play—conclude the text. Included are two actual scouting reports.

In his 23 years of coaching, Doggie has captured an NCAA crown at Holy Cross, had a successful turn with the Boston Celtics, and has won three out of the last four Ivy League titles at Dartmouth. After reading his book, you'll instantly discover why.

This is a "must" book for every coach on every level of play.

- **PLAYGROUNDS: Their Administration and Operation (3rd Edition).** By George D. Butler. Pp. 513. New York: The Ronald Press Co. \$7.

UP-DATED in keeping with all the developments in the field, the third edition of this comprehensive and authoritative volume emphasizes the many problems involved in organizing a program and administering a system, and describes the procedures followed by recreation authorities throughout the country.

The topics fall into four major areas: design and equipment, leadership, activities, and programs. Many examples of daily, weekly, and seasonal programs are given. The training of workers is covered. And the allocation of funds, necessity for records and reports, and ways of handling publicity are presented in the section on administration.

Excellent written, meticulously detailed, this book has become the standard text in the field.

- **THE PROS: A DOCUMENTARY OF PROFESSIONAL FOOTBALL.** By Robert Riger and Tex Maule. Pp. 200. Illustrated—photos, drawings, diagrams. New York: Simon and Schuster. \$10.

GORGEOUS is just the word for this big 9 x 12 inch book. The joint handiwork of a crack artist-photographer (Riger) and football expert (Maule), it contains probably the greatest collection of football photos ever to see print.

Riger, who draws from photos, took all these fabulous pictures himself. The shots are large, sharp, stark, and enormously exciting. Put together with genuine artistic taste, they form an action-stacked gallery of the pro game.

The text is merely supplementary. It is terse, succulent, and highly authoritative, coming as it does from *Sport Illustrated's* No. 1 football expert (Maule). A lot of fine drawings and diagrams makes it Maule the merrier.

- **EXERCISE AND FITNESS. A Collection of Papers Presented at the Colloquium on Exercise and Fitness.** Pp. 248. Illustrated. Chicago: The Athletic Institute. \$3.

A COMPILATION of 20 papers delivered by the country's foremost authorities in physical education, physiology nutrition, medicine, and psychology at the Colloquium sponsored by the U. of Illinois and The Athletic Institute last December, this book represents a landmark in the search for means of preventing or retarding the physical deterioration that has accompanied man's retreat from manual labor.

The papers are divided into five aspects of exercises and fitness: medical, physiological, nutritional, psychological, and physical education. All of these have a direct bearing on the work of the coach, physical educator, teacher, recreational worker,

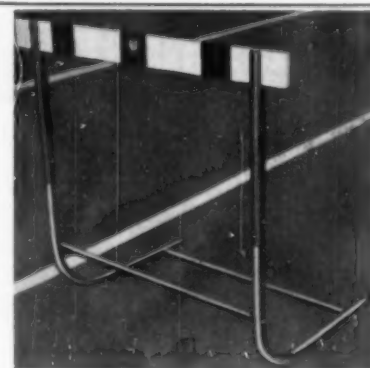


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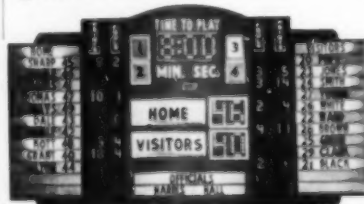
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- **EQUIPMENT AND SUPPLIES.** Pp. 104. Illustrated. Chicago: The Athletic Institute. \$2.50.

THE result of a workshop (co-sponsored by the AAHPER and The Athletic Institute) composed of outstanding physical education leaders and equipment specialists, this manual offers a valuable reference source for schoolmen as well as a textbook for courses in the planning of facilities and equipment.

The book covers: significance and basic principles, types and quantity of selection, budgeting, procurement, accountability, and maintenance. Pictures, graphs, and charts illustrate particular features, and many helpful references and sources for additional information are also given.

- **OLYMPIC GYMNASTICS, VOL. III: POMMEL HORSE.** By G. C. Kunzle. Pp. 184. Illustrated. New Rochelle, N. Y.: Sports Shelf. \$7.50.

THIRD in a series of gymnastics books prepared in England (the first two were on freestanding and horizontal bar), this is an authoritative text dealing with every aspect of the pommel horse. The book starts with the basic elements, then goes on to all the movements and exercises.

A useful and comprehensive manual, it's illustrated with many fine diagrams and photo sequences.

Miscellaneous

- **Adhesive Strapping Technique.** By Bill Dayton. Pp. 48. Illustrated. Free. (Prepared by the great Yale trainer, this highly authoritative, profusely illustrated manual is being offered free to coaches and trainers—\$1 to others. Write on your school letterhead to Athletic Division, The Seamless Rubber Co., 464 Congress Ave., New Haven, Conn.)

- **Athletic Achievement Program for Boys and Girls.** Edited by Harold T. Frierhood. Pp. 111. New York: Association Press. \$4. (An excellent physical fitness testing program, replete with detailed scoring scales and record forms.)

- **Adelphi College Coaching School Notes.** By George Faherty. Pp. 62. Illustrated—diagrams. Garden City, N. Y.: Adelphi College. \$1. (Lecture notes and diagrams from the 1960 Adelphi basketball coaching school featuring Adolph Rupp, Neal Baisi, Clair Bee, and three crack high school coaches.)

- **The Cavalcade of Basketball.** By Alexander M. Weyand. Pp. 271. Illustrated. New York: The Macmillan Co. \$5. (An absorbing history of the game, its players, and records, covering college, AAU, Olympic, and pro ball.)

(Concluded on page 94)

Ordering Your Equipment

(Continued from page 65)

of the invoice will vary according to a school's individual financial system.

5. The goods, when received, should be examined and approved as to the quantity and the quality ordered. This is sometimes accomplished through the receiving report. After an examination of equipment, the items should be placed in the current inventory.

This procedure will, of course, vary from school to school. But it is important that the coach adopts a systematic purchasing procedure. The purchase order should always have proper approval of the chief school administrator. This is your best purchasing safeguard.

When a school uses a bidding procedure in purchasing, care must be exercised in the preparation of nomenclature of items for which the buyer will obtain bids. The articles should be properly defined to eliminate the possibility of acquiring inferior equipment.

After his equipment needs have been determined, the coach should turn his attention to the degree of quality he wants in the items. A precise outline of the coach's needs will enable the bidder to meet the equipment specifications more exactly.

Many schools do not use bidding procedures in athletic equipment due to the inherent danger of receiving lower-quality equipment that is actually inadequate and unsafe for athletic programs.

Just when should a coach buy his athletic equipment? One word will provide a sufficient answer: "EARLY!"

One major fault of most coaches in buying and ordering is that they don't plan their time for this all-important phase far enough in advance. Athletic equipment must be ordered as early as possible. Many times the manufacturer is unjustly blamed for delayed shipments, when actually it is the buyer who is at fault, because of a late order. To better understand the problems involved in the placement of orders, let us consider some of the factors involved in the manufacture of athletic equipment.

Production Problems. Much athletic equipment is custom made to very exacting specifications. The manufacturers cannot produce this custom-made equipment until they have the dealers' orders. The dealers cannot place the orders until they have the schools' specifications and requirements. The schools, in turn, are often

delayed by budgeting and purchasing programs and procedures.

Special orders, uniforms particularly, are handled in a special department by specially-trained workers. This is a general manufacturing practice. The supply of these skills is limited. You cannot find specially trained workers to supplement a work force overnight to handle late orders. The manufacturers of athletic equipment, therefore, try to spread the production schedule across a reasonable period, not only to hold trained employees but to give them time to maintain quality standards.

For three months a year, during June, July, and August, the whole production plan is upset because delayed orders hit a sudden peak and everything gets confused. Delayed orders result in delayed delivery, disappointment, and added expense up and down the line.

To give you an example of the manner in which production of athletic equipment can be compressed by late orders, consider the production schedule on football equipment.

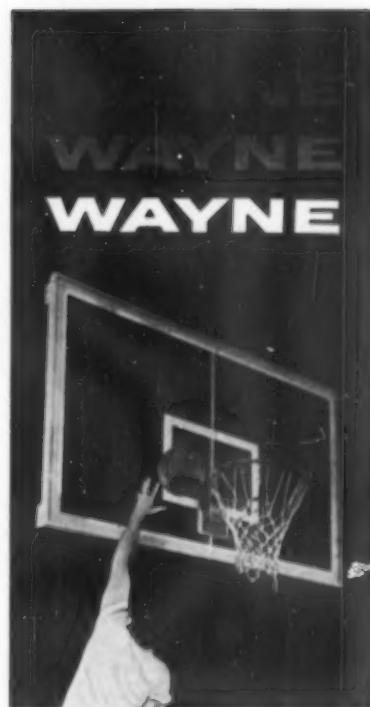
First Week June	-	11	more weeks of prod.
Second Week June	-	10	" " " "
Third Week June	-	9	" " " "
Fourth Week June	-	8	" " " "
First Week July	-	7	Plant Closed, Vacation
Second Week July	-	7	Plant Closed, Vacation
Third Week July	-	7	more weeks of prod.
Fourth Week July	-	6	" " " "
First Week Aug.	-	5	" " " "
Second Week Aug.	-	4	" " " "
Third Week Aug.	-	3	" " " "
Fourth Week Aug.	-	2	" " " "
First Week Sept.	-	1	" " " "

Peak Loads. It is easy to see, therefore, after reviewing the above production schedule, what happens when a heavy load of late orders is received in June, July, and August. Due to late ordering by schools, the pressure often builds up so greatly during June and July that a six month production schedule of football equipment is compressed into a single 30-day period.

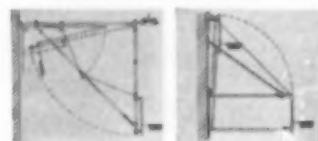
This is a costly, wasteful method of production that can be avoided through the cooperation of everyone concerned with equipment selection and purchasing—by ordering equipment well in advance of these peak periods of production.

Special-order uniforms are the biggest problem because there are so many variations as to size, color, type of fabric, style, etc. But the problem of meeting peak loads is not only due to the late ordering of uniforms. It applies to every area of athletic goods production. The constant and growing tendency is to give the factories less time to produce, in a situation where more and more time is needed to produce top equipment.

Under conditions prevailing today, advance orders for fall and winter equipment (especially football and basketball equipment) should be

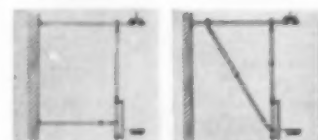


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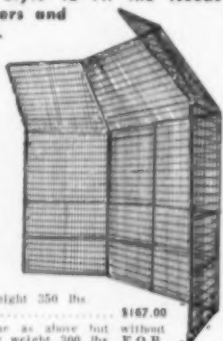
THIS article is reprinted from the superlative booklet, "How to Budget, Select and Order Athletic Equipment," prepared and distributed free of charge by the Athletic Goods Mfrs. Assn., 209 South State St., Chicago 4, Ill.

NEW CATALOG

AALCO BASEBALL AND SOFTBALL BACKSTOPS

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Playing Field.

Sloping overhang
on this model pro-
vides same pro-
tection as a con-
ventional backstop
two to three feet
higher. Frame
work of galv-
anized pipe, tube
and fittings. Gal-
vanized wire
mesh. Easy to
install. Instruc-
tions furnished.



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wide, 8' high.
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stand at 45 deg.
angles. 4' over-
hang. Shipping weight 350 lbs.
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openings. Exclusive "Spring Top" construction
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AALCO MANUFACTURING CO.
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placed with dealers no later than
March or April. This permits time for
proper checking of size, color, manu-
facturing specifications, and other de-
tails important to producing what the
coach wants. When time is inadequate,
delays and disappointments accrue.

The suggested time to order spring
and summer equipment (baseball,
track, and tennis) is not later than
October or November.

The Answer to the Problem. The
answer to the manufacturer's problem
of producing seasonal equipment, with-
out being faced with peak loads dur-
ing a one or two month period of
production, is the early placement of
orders. If the coach and school give
the manufacturer time to produce the
equipment, better equipment and
more satisfactory service will result.

There is a growing practice today
for school and college boards to confer
well ahead of the seasons on their
plans for a sports schedule, the equip-
ment they will need, and where they
plan to obtain it. The purchasing of
equipment is pretty well decided upon
by the departments concerned in
these advance conferences. If the
schools would adopt the additional
practice of calling in the equipment
distributors at this time, place their
equipment orders, and get them in
early to the manufacturers, produc-
tion and delivery could be made well
in advance of actual needs.

Placement of equipment orders
should be made during the period of
reduced training and playing activity
in the schools. It should be accom-
plished right after the close of a
sport season, if possible. Such advance
planning would assure the coach of
getting what he wants when he needs
it—and contribute greatly to raising
athletic equipment quality standards.

ADVANTAGES OF ORDERING EARLY

Early ordering of athletic equipment
offers many advantages to the coach
and school as well as to the manu-
facturers. Here are some of the advan-
tages of early ordering to the school
and coach:

1. **EARLY DELIVERY.** You get delivery
ahead of your needs. There are fewer
disappointments, fewer headaches cor-
recting last-minute ordering mistakes.

2. **TIME FOR REVISIONS.** When you
get your equipment early, you have
time for size adjustments, revisions,
and time to order for new men on the
squad.

3. **BETTER EQUIPMENT MANAGEMENT.**
Equipment that's ready for the first
practice session gives you ample time
for marking, careful fitting, player
assignment, and better equipment
control.

4. **BETTER EQUIPMENT.** An early or-
der assures you of exact equipment,
carefully made to your specifications
by unhurried craftsmen.

5. **GREATER SATISFACTION.** You re-
ceive orders without substitutes. Your
team looks better, plays better, and
your equipment problems are mini-
mized.



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Paramount manufactures a
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Olympic Sets
Supine Exercise Benches
Dumbbells & Racks
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Indirect Panel Lights—Resonating
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Two-Year Guarantee.

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Naden scoreboards — ask
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Football Catalog 2S or Base-
ball Catalog 3S.

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Webster City, Iowa

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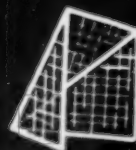
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LACROSSE GOALS

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WEIGHT RACK

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- 1958—Aluminum Water Basketball Standards portable for indoor and outdoor pools
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•NYLON GOLF PRACTICE CAGE•
 in 4 different portable models

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BASKETBALL
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GLASSES



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 U. S. GOV'T
 SAFETY STANDARDS

Light-Weight—Shock-Resistant
FULL VIEW VISION

ALL-AMERICAN basketball glasses for top-notch players who must wear glasses. Sturdily built to withstand hardest knocks. Case-hardened lenses are ground from finest optical glass to individual prescription. Lenses are fitted into tarnish-proof white metal frames. Special shock-proof nose guard brings greatest comfort in practice or games. Conventional temples. Adjustable, elastic head-band assures tight, non-slip fit.

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\$24.75, complete, w. case

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 Dept. S-1 Rochelle, Ill.

Light Fantastic

(Continued from page 69)

normal lines of sight of players and spectators. When this isn't entirely possible, there should be a compromise between eliminating glare and having the light provided from the proper direction. When relocation or the raising or lowering of the floodlights isn't possible, baffles or shields can be used to reduce spill light and glare.

Once the correct number of floodlights and their location and mounting heights have been determined, the floodlights must be properly aimed to produce a satisfactory installation. Each floodlight is important and should be aimed to its appropriate point on the playing field. Aiming is usually facilitated with a "spotting" or aiming diagram which is prepared in conjunction with the floodlight location layout.

The accompanying layouts and tabulations are offered as guides to well-lighted football, baseball, softball, and combination installations. The lamps are operated at 10% over the rated lamp voltage. This is done because installations are operated only for short periods of time each year, say under 200 hours, and in many cases good economy has led to operating incandescent lamps at higher voltage than labeled on the bulb.

Operation at 10% over rated voltage is economical when use is less than 200 hours, and 5% when use is between 200 to 500 hours. With over 500 hours use per year, rated voltage is recommended.

Football Spotting

(Continued from page 46)

goes for \$49.95, while the film lists for \$7.75 for 12 polaroid photos.

Similar results may be obtained by employing the regular polaroid camera—it costs much less. Without too much trouble, coaches should be able to locate three polaroid cameras among alumni, boosters, parents, or student body. Two can be used for the before-and-after center snap photos, while the third can make the slides.

Additional equipment needed are a telephoto attachment, which costs about \$14, and a kit for making two-minute positive slides, which costs about \$8. This includes a roll of Type 46 film and plastic mounts to hold the slides. A slide projector is usually part of the school's audio-visual equipment and can be used in the locker room on Saturdays.

Many teams keep the 10-second prints and two-minute slides on file, studying them again and again—particularly when coming up against



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Durable Wayne Model 30 folding bleacher. Economy seating in the folding bleacher class.



Leader in luxury seating at a popular price. Wayne Model 60 Rolling Gymstand.



Deluxe Model 70 continuous rolling gymstand. Finest money can buy!



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with the Original
PEFFLEY
WEIGHTED BASKETBALL VEST**



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IN COACHING
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or write For FREE catalog to—
THE PROGRAM AIDS CO., INC.
Dept. SC, 550 5th Ave., N. Y. 36, N. Y.

the same club the following year. Jack Faulkner, defensive backfield coach for the Los Angeles Chargers, has made the polaroid camera an integral part of his coaching, and keeps his fabulous collection of downfield shots on file for constant reference.

An interesting sidelight on the use of the polaroid camera was furnished by Akron University's coach, Joe McMullen. He complained to the referee that his counterpart on the other side was roaming beyond the legal limits. When his protests were ignored, he snapped a picture to prove his point, showing it to the unbelieving referee moments later!

Future officials calling offside and clipping penalties may well have to argue their decisions with coaches who rush up waving these 10-second snapshots.

An old and often used cliché—a picture being worth a thousand words—is finding more and more use in football. These photos have helped top pro and college coaches. They can help you!

New Books

(Continued from page 90)

● **Knute Rockne.** By Francis Wallace. Pp. 286. Illustrated. Garden City, N. Y.: Doubleday & Co. \$3.95. (A wonderfully absorbing biography of probably the greatest and most magnetic football coach who ever lived, full of fascinating anecdotes, "inside" vignettes, etc.)

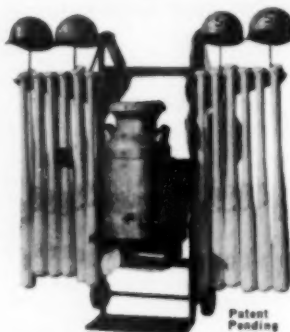
● **1960-61 Oregon H. S. Coaches Directory.** Salem, Ore.: Coaches Directory. \$1. (A complete list of the schools in Oregon, together with their addresses, phone numbers, and coaching personnel.)

● **1961 Official NCAA Guides: Wrestling, Swimming, Ice Hockey.** \$1 each. (Official rules, records, reviews, schedules, etc. Order from The National Collegiate Athletic Bureau, Box 757, Grand Central Station, New York 17, N. Y.)

● **1961 Official Volleyball Guide.** Edited by J. Edmund Welch. \$1. (A handsome easy-to-read rules and reference guide containing records, reviews, etc., on high school, college, and U. S. Volleyball Assn. volleyball. Order from USVBA Printer, Box 109, Berne, Ind.)

● **1961-62 Official NCAA Boxing, Gymnastics, Skiing Rules.** 75¢ (Official rules for all these sports plus their methods of application and other essential information. Order from The National Collegiate Athletic Bureau, Box 757, Grand Central Station, New York 17, N. Y.)

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- Holds 24 bats, all the catcher's gear, extra balls, first aid kit, batting helmets, and water container.
- Folds up to fit in a 25-inch space. Easily stored in car trunk or office.
- Keeps equipment and bats off the field—less danger to players—less damage to equipment.
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OLSON TRACK AND FIELD SCORE CARDS

- You can't run your meets without an efficient system of recording results. This is the original recording and filing method in field.
- These cards are sold in sets. Each set consists of one card for each event plus a Summary Filing Folder for recording results and other pertinent data.
- Start a permanent record system by ordering a set for each of your meets.

90¢ per Set

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CHAMPIONSHIP TENNIS BALLS

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Used in tournament play, thoroughly cleaned and reprocessed.

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ONE SIZE
Designed to fit everyone**



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- No new injury or recurrence.
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- Unbreakable.
- Comfortable.
- Worn against skin or over sock.

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Economy Offer—\$18 per dozen
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Follett Publishing Co., Sports Dept. 58
1010 W. Washington Blvd., Chicago 7, Ill.

• **Marksmanship for Young Shooters.**
Pp. 24. Illustrated. Washington 6,
D. C.: AAHPER. \$1. (Fifth in a series
of books and pamphlets on outdoor
education, this book has been especial-
ly prepared to show how the teaching
of the spring-type air rifle can be in-
corporated very easily into school cur-
ricula and clubs, and community
agency programs. It covers graphically
and thoroughly: planning the pro-
gram, use in the curriculum, special
projects, history of guns, gun-hand-
ling, setting up the range, shooting
skills, range procedure, field training.)

British Publications. All the follow-
ing British publications are being dis-
tributed in the United States by Sport-
Shelf, P. O. Box 634, New Rochelle,
N. Y.:

• **Instruction in Table Tennis.** By
Harry Venner. Pp. 121. Illustrated.
\$3.75. (Covers all the fundamentals
skills, range procedure, and field
training.)

• **Learning Lawn Tennis.** By Emlyn
Jones. Pp. 112. Illustrated. \$3.50 (De-
signed for all players; covers all the
strokes with sequence strips of fa-
mous players.)

• **Skiing, a Know-the-Game Book.**
Pp. 32. Illustrated. 75¢ (Revised edi-
tion covering preliminary training,
equipment, and all the techniques.)

• **Official F. A. Year Book, 1960-61.**
Pp. 128. Illustrated. \$1.50. (Official
publication of English Football (Soc-
cer) Assn. containing records, and
several technical articles.)

• **Soccer Football Rules, 1960-61.** Pp.
16. Illustrated. 20¢. (Lists the interna-
tional rules and adaptations of U. S.
Soccer Football Assn.)

• **High-Speed Rugby.** By E. S. and
W. J. Higham. Pp. 334. Illustrated.
\$6.75. (Comprehensive textbook that
delineates all the individual and team
skills.)

• **Tackle Boxing This Way.** By Peter
McInnes. Pp. 127. Illustrated. \$3.75.
(Covers all boxing techniques plus
training, diet; aimed primarily at be-
ginners, though applicable to experi-
enced boxers and coaches.)

LITTLE LEAGUE BASEBALL FILM

TED WILLIAMS stars in a 16-mm
sound movie, *A Happy Summer Even-
ing*, that describes the fun and excite-
ment an average father experiences
in coaching his son's Little League
Baseball team. Williams and other
Red Sox players appear in the film to
offer professional pointers on batting,
pitching, and fielding.

Produced for Little League through
the cooperation of Chrysler Corp., it's
a nice, relaxed, and heart-warming
movie that both youngsters and adults
will enjoy. It has a running time of
28 minutes.

The film was made at the Red Sox
training camp in Phoenix, and is being
offered for showing free of charge.
Contact a local Chrysler Corp. dealer
or write to Modern Talking Picture
Service at 3 East 54th St., New York
22, N. Y.



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Catalog of Complete Sports Line
- 2 ABBOTT LABS. (38-39)**
Literature on Dayteens, Nutritional Supplement
- 3 ADIRONDACK BATS (Center Insert)**
Information on Northern White Ash Bats
- 4 AIR PAD & BRACE (71)**
Catalog on Heavy-Duty Knee Brace, Adjustable Ankle Brace
- 5 ALUMINUM ATHLETIC (89)**
Catalog on Aluminum Track Equipment
- 6 ALUMNI ATHLETIC (87)**
Information on Gym Scooters
- 7 AMERICAN BASEBALL CAP (81)**
Information on Baseball Protective Cap
- 8 AMERICAN BITUMULS (73)**
(a) Information on Laykold All-Weather Tennis Courts
(b) Information on All-Weather Grasstex Tracks and Tennis Courts
- 9 AMERICAN CO. (94)**
Information on Reprocessed Tennis Balls
- 10 AMERICAN LOCK (72)**
Catalog on Key-Combination Padlocks
- 11 AMERICAN PLAYGROUND DEVICE (69)**
(a) Literature on Complete Line of Dressing Room Equipment, Rubber Foot Baths, Basketball Goals, Chain Link All-Steel Tennis Nets, Backstops
(b) Folder on Lifetime Aluminum Diving Board
- 12 AMERICAN WIRE FORM (74)**
Folder on Locker Baskets, Storage Racks, and Uniform Hangers
- 13 ARNETT, RICHARD W. (57)**
Information on Arnett Starting Blocks
- 14 ARNO ADHESIVE TAPES (30)**
Samples of Adhesive Tape
- ATHLETIC INSTITUTE (84)**
- 15 AUDIO EQUIPMENT (34)**
Brochure on Transistor-Powered Portable Megaphones
- 16 AUSTIN, R. E. (60)**
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- 17 BALL-BOY (75)**
Information on Automatic Tennis Ball Throwing Machine
- 18 BEAUTY APPLIANCE (71)**
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- 19 BERLIN CHAPMAN (79)**
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- 20 BIKE WEB (17)**
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- 21 BROWN, M. D. (68)**
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- CAMP BIRCHWOOD (95)**
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- 27 DAKON (65)**
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- 28 DE BOURGH MFG. (65)**
Literature on All-American Athletic Lockers
- 29 DU PONT (53)**
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Details on Bleachers
- 31 EASTMAN KODAK (1)**
Bulletin on Movie Coaching Equipment
- 32 ELMER'S HANDICAPS (77)**
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Electric Scoreboards
(a) Basketball Catalog
(b) Football Catalog
(c) Baseball Catalog
- 34 FEATHER TIP (83)**
Information on Nylon Steel Tipped Cleat
- 35 FEISE, F. C. (29)**
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- 36 FENNER-HAMILTON (35)**
Catalog of Gym-Master Line of Trampoline Brand Rebound Tumbling & Gymnastic Equipment

- 37 FOLLETT PUBLISHING (95)**
List of Sports Books
- 38 GILL, HARRY (36)**
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- 39 GOLD MEDAL PROD. (22)**
Catalog on Refreshment Equipment and Supplies
- 40 GRAVCO (94)**
Information on Portable Baseball Equipment "Valet"
- 41 GYMNASIUM SUPPLY (47)**
Buyer's Guide and Catalog of Gymnasium and Field Equipment
- 42 HALDEMAN-HOMME (50)**
Information on Basketball Jump Training Device
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- 44 HARVARD TAB. TENNIS (41)**
Table Tennis Tournament Kit
- 45 MILLERICH & BRADSBY (25)**
(a) Color Catalog of Baseball and Softball Bats
(b) Catalog of Grand Slam Golf Clubs
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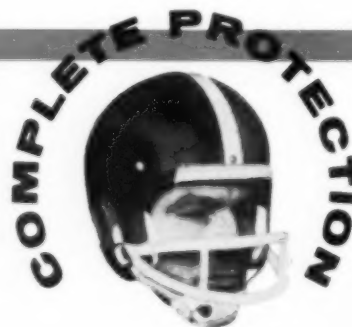
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